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November 1984



# Issues in Social Impact Analysis: Interagency Symposium Proceedings



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# ISSUES IN SOCIAL IMPACT ANALYSIS

## Proceedings from an Interagency Symposium

November 1984

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Opinions expressed in this document are of individual authors and do not necessarily represent the viewpoint of the employing agency.



## EDITOR'S PREFACE

On August 22, 1984, the Forest Service, with the support of the Natural Resources Research Group of the Rural Sociological Society, sponsored an interagency symposium on social impact analysis in natural resource agencies. The symposium, featuring 20 panelists from 8 resource agencies and 4 universities, was a pre-session to the annual meeting of the Society at College Station, Texas. The symposium was well attended, with an average of 40 persons per session, and most remained for the entire day. Presenters reviewed and compared agency SIA practices, discussed current developments, and exchanged perspectives of future trends in the field. The quality of the presentations was superior, reflecting both advance preparation and the rich experience of the participants.

This document contains transcripts or summaries of most presentations. Each is printed as submitted, with only minor editorial changes. Volumes were mailed to all participants and a limited supply of additional copies is available on request.

On behalf of all agency participants, the editor expresses gratitude to the Rural Sociological Society, both for its interest in natural resource issues and for providing a suitable forum for meeting people and exchanging ideas. The work of panel organizers and presenters is also warmly appreciated, along with agency support for this type of activity.

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## INTRODUCTION:   LOOKING AHEAD

by:   Lambert N. Wenner  
      U.S. Forest Service

Like many other agency activities, social impact analysis is affected by budget cuts, declining personnel ceilings, and increased pressure for cost-efficient outputs from public lands. Yet I think the long-term prognosis for our field is quite favorable. Looking ahead to 1990 and beyond, I foresee an increased need for SIA. What remains at issue is who will do it and how effectively it will be done. Agencies, universities, and private consultants how share this responsibility The quality of work in each sector is uneven and even the best work is sometimes underutilized.

We can get some idea of where we are going by looking at the recent past. About 15 years ago we witnessed mounting public concern about the quality of the natural environment and human-environment interactions. Many people began to perceive the earth as a finite resource subject to unprecedented consumer demands.

On April 22, 1970, Americans observed their first Earth Day to draw attention to our battered and polluted planet. At that time I was a sociology professor at the University of Idaho and participated in an all-day assembly. The auditorium was overflowing, indicating widespread student and faculty interest. But I also remembered that on this campus of 8000 students, most of whom lived within a few blocks, there was widespread concern about the inadequacy of 2000 parking spaces. The University planned to construct hundreds more. I wondered, can the children of the affluent 1950's and 1960's, or even their parents, take conservation seriously?

My presentation was on world population growth and its implications for food supplies, raw materials, and ecology. Other speakers discussed energy consumption, waste of resources, pollution, and the need to redefine our values and lifestyles.

Earth Day and the environmental movement it symbolized spawned numerous new courses in many university departments throughout the country. An avalanche of new books with graphic titles resulted and many were used as texts. Perhaps some of you remember the titles of these and earlier works.

Our Plundered Planet  
Silent Spring  
The Population Bomb  
Ecocide  
Terracide  
The Endangered Planet  
The Frail Ocean  
The Environmental Crisis  
and even:  
Famine--1975! America's Decision:  
Who will Survive?  
Are Our Descendants Doomed?



Over 14 years have intervened since Earth Day, bringing two serious economic recessions. The massive publicity attending the environmental movement has diminished somewhat as newer concerns emerged. However, the issues raised remain with us; and there is continuing public and interest group commitment to a quality environment.

Let us review some of these issues and their aftermath:

1. In 1980 and 1982 the United Nations and the United States projected continuing population growth at close to Earth Day levels.

The 1985 world population of 4.8 billion could double in about 50 years.<sup>1/</sup> Most of the modest growth rate reduction that has occurred in recent years is due to rigorous control programs in a few countries such as China, Taiwan, and Thailand. Rates in some other locations are increasing due to improved control of epidemic diseases and the reduction of infant mortality. The U.S. population is expected to increase 75 million during the next 50 years.

2. The Green Revolution has not met initial expectations. Fragile hybrid grains are susceptible to diseases and massive amounts of fertilizer are required to produce high yields.

3. Although uneven and erratic, economic growth is continuing over the majority of the globe. Natural resource demands are increasing. Per capita demand for energy and raw materials is increasing much faster in many developing countries than in the industrial West.

4. The most plentiful and accessible supplies of natural resources are being depleted. These include vital resources such as oil, iron, fresh water aquifers, and hardwood forests.

5. International trade is a rapidly growing sector of the economy and most countries, including our own, are increasingly dependant on both imports and export sales to meet basic as well as luxury needs.

6. We are becoming more aware of environmental problems that are international in scope. These include acid rain, the "green house effect" the defoliation of the tropics, and the pollution of the oceans.

<u>1/ U.S. Projections for World Population, 1980, middle series</u>		<u>U.S. Census Projections for U.S. population, 1982, middle series</u>	
1985	4.8 billion	1985	239 million
1990	5.2	1990	249
1995	5.7	1995	260
2000	6.1	2000	268
2025	8.2	2025	301
2035	8.9 (extrapolated)	2035	314 (extrapolated)
Source: <u>Statistical Abstract of the United States, 1984.</u>			



All of these trends suggest that resource needs, environmental protection measures, and related social changes will increase in the years ahead. There will be more emphasis on:

- Exploration and development of new sources of nonrenewable resources.
- Improved per-acre crop yields and improved land utilization.
- Substitution of materials, often at greater cost or reduced quality.
- Conservation, including better utilization and recycling of wastes.
- Increased international competition, cooperation, and conflict to resolve resource shortages and pollution problems.

Of course there are many proenvironmental trends that partially mitigate the grave predictions of 1970. In the U.S. there is a strong trend toward smaller cars and homes. Many programs to reduce air and water pollution have been locally successful. We have taken steps to protect endangered species, preserve wildernesses, and reduce our exposure to carcinogens. In addition, modern computer and communications technologies have vastly increased our ability to analyze complex problems and implement solutions.

These are impressive achievements but we must continue to focus on what needs to be done.

So what does this have to do with social analysis? The trends I have mentioned have many implications for social impact analysis.

At the local and regional levels we may expect many new proposals for development of both renewable and nonrenewable resources. Energy and mineral projects on public lands will increase sharply. There will be a growing demand for residential subdivisions and recreation areas. If metropolitan areas become too large to be affordable and manageable, more decentralization of business and industry and more "new town" development will occur.

At the national level I foresee greater recognition of the need to consider noneconomic factors in shaping our future. Because of rising prices and diminished public funding, we will make greater efforts to educate the public about our needs and options. Congress and executive leadership will place more emphasis on identifying really essential needs, the resources these require, and ways to meet these needs efficiently.

At the international level I look for more cooperative programs to help developing nations define their problems and meet their needs. Social analysis will be needed to smooth the transition from old to new lifestyles and values.

I see an enlarged role for socioeconomic and sociocultural impact analysis, by default if not by design. But we can respond more quickly and achieve more goals by defining needs and grasping opportunities. The challenge is to recognize and effectively respond to the job that needs to be done.

As social scientists in agency and university settings, we have a unique opportunity to help resolve the kinds of problems I have been discussing. Collectively, the agencies and institutions we represent can and do play a major role in formulating and implementing solutions. We can contribute by:

1. Keeping abreast of what's happening in the broad social context of agency activities. Recognize that our publics are diverse and both influence and are influenced by resource agency programs.
2. Playing an active rather than a passive or reactive role in our organization. Anticipate ways to involve social analysis in planning; decisionmaking, and other situations. Show others the benefits of identifying social needs and ensuring their analysis.
3. Demonstrating through the work we do and the procedures we develop that social analysis has a vital place in agency programs. Make this work meaningful to people in other fields.
4. Devoting more attention to social analysis at the macro level. Social impacts often transcend local community issues. Induced, regional, and cumulative effects may be overlooked.
5. Scoping salient social issues early in each program or project analysis. Focus the social analysis on these issues and follow them through each step, including post-decision monitoring.



NEW DIRECTION IN ENVIRONMENTAL ANALYSIS:  
IMPLICATIONS FOR SOCIAL ANALYSIS

INTRODUCTORY REMARKS

Arnold G. Holden  
Sociologist  
Pacific Northwest Region  
USDA Forest Service

The first session today looks at the new direction in environmental analysis, questioning the significance and relevance of the topics and information we analyze.

Today we will look at the principal means for assuring attention to the most significant, (and minimizing attention to least). That process is now formalized into an early step in the process called "scoping."

Our program in this first segment will introduce you to "scoping," and then you will hear from three practitioners of their experience with it.

The Ties between Enviromental Analysis and Social Analysis

Before going to that, I would like to offer a few observations on the ties between environmental analysis\* and social impact analysis.\*\* These are some ideas that have helped me put the two in perspective, and to see the relationship between them.

First, I want to underscore the tie between environmental analysis and social impact assessment. I am very comfortable asserting: Social impact analysis has virtually no value if conducted apart from environmental analysis.

There are several reasons for this assertion. One is a recognition of the organizational structure social scientists work in--we are usually attached to planning or environmental staffs, and the formal organization offers the most efficient and obvious entrance.

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\*I am using "environmental analysis" to refer to the overall process of examining the effects of decisions on the total environment--physical, biological, economic, and social. Any good resource planning process incorporates all these elements.

\*\*I am using the terms "social impact assessment", "social impact analysis", and "social analysis" interchangeably in these remarks.

Secondly, our basic legal entre into planning, decision making, and policy matters is through the National Environmental Policy Act (NEPA). And the courts and the Council on Environmental Quality (CEQ) have said that NEPA is an environmental policy act, (with emphasis on the physical and biological environment), and not an economic or social policy act.

And thirdly, there are sound sociological arguments for firmly incorporating social analysis into the larger process of environmental analysis. Catton and Dunlap\* presented a convincing argument for the need to recognize that humans, and their social structures, are an interacting part of the physical and biological world.

To ignore the physical, biological, and economic factors which interact with social life is to try to work within what they call the "Human Exceptionalism Paradigm"--the assumption that humans are exceptions to the constraints of the larger ecosystem they are in.

I think that we practioners in the natural resource agencies are in a unique position to test, and to confirm for the discipline, the importance of the environment, resource scarcity, and the interaction of social organization and the physical and biological environment. We see that empirical interaction in our work on a daily basis. We must also insist on our fully integrated inclusion in the various environmental analysis processes.

### The Three Crucial Aspects of Social, (and Environmental) Analysis

The other idea I would like to share with you is this. I see three crucial characteristics of good social and environmental analysis, and I think that examining them will be a helpful way to examine what we're doing, and how well we're doing it.

The first aspect of the process is the obvious one--the scientific aspect.

This scientific or analytic aspect includes the collection and organization of data according to the rules of science. We use scientific theories and previous findings to predict future events. A lot of the early writings in social impact assessment dealt with this aspect. We saw titles like The Methodology of Social Impact Assessment.

This is the part we are most comfortable with. It is where our formal training was; it is where the rules are stated and shared; and it is where we can begin to share our work with others.

The inter-disciplinary process is the basis for current environmental analysis. Science provides a language, a forum, and some rules for relating to people in other disciplines.

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\* William R. Catton, Jr. and Riley E. Dunlap, "Environmental Sociology: A New Paradigm," The American Sociologist Vol. 13, (February 1978).



Another aspect of the social and environmental analysis process, and one that was overlooked in much of our work in the 1970's, is the political, or policy, aspect.

By this I am not referring to partisan politics, or to the electoral process. What I want to capture in this aspect of environmental analysis is the broad sense by which we incorporate expressed and organized social values into making decisions--decisions about the allocation and management of scarce resources.

This political aspect appears in two places in the process. In the beginning it defines the topic. What is important, what is at stake? This is a crucial step, and was often overlooked in the early days of environmental analysis when we assumed that everything was important, (or potentially important), and had to be included.

The 1978 CEQ Regulations now acknowledge this policy aspect of analysis by insisting on "scoping" early in the process to determine what is important to the decision, what data and analysis are needed, and how that analysis would be done. So the process is now explicitly, if subtly, responsive to policy, or "political" elements.

The other place where political information and concerns enter into the process is at the end, the decision-making step. Those who form the decision need to know what the stakes are, who the stake-holders are, and how they will be affected, (and how they may react). If this information is not part of the scientific and analytic work we have done, that previous work is of minimal utility to the decision-maker, and thus of minimal impact on the decision.

In addition to the scientific and the political aspects of social analysis, or environmental analysis, is one that we haven't talked or thought much about. But I am becoming convinced that it is of equal importance with doing scientifically valid data collection and analysis, and of equal importance to a contribution that is attuned and responsive to policy concerns. Both the scientific and political aspects are dependent for their effectiveness on a third process--the interpersonal process.

The scientific work and the policy work both occur in interpersonal interactions, and the important ones are face-to-face. The net result of the scientific work is validated in the inter-disciplinary team. Interpersonal skills are crucial in the give and take of the team's effort to prepare a sound and relevant analysis. Questions such as: How much emphasis to give to a likely impact? How to proceed with data collection and analysis? How much time and effort is possible and needed? When to go ahead in the face of incomplete information and uncertainty? These are answered as team decisions.

The sociologist's (or other team member's) personal credibility and her or his social standing in the interdisciplinarily team are most crucial in answering these questions. Paper input alone is of minimal value.

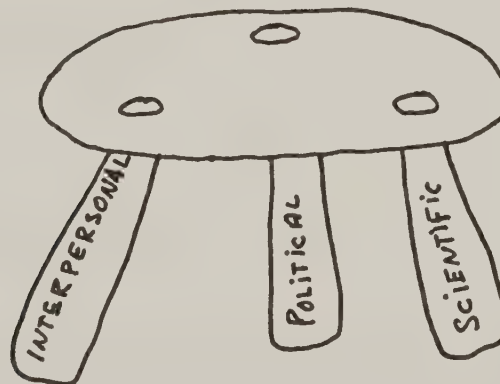
In giving direct advice to decision-makers, the interpersonal aspect is even more crucial. With issues and questions even less well defined than in the analytic process, and with the implications even more amorphous, the interpersonal skills of the sociologist (or other team member) are critical.

The decisionmaker must decide, as part of choosing a path of action, "how much do I believe the analysis and advice of the people on the inter-disciplinary team?" This often boils down to "how much do I believe those people?", and in the case of data and interpretations of our discipline, "how much do I believe our sociologist?"

Personal and professional credibility comes partly from the sensitivity and education of the decisionmaker, but much must come through the interpersonal skills of the sociologist.

I see all three processes--scientific, political, and interpersonal--as crucial to successful social and environmental analysis. Our effectiveness can be no greater than the weakest of the three.

I envision an old time three-legged milking stool. All three legs are essential; if one is weak or missing. . . those of you have been around dairy barns know what happens next.



If we are to be effective in influencing decisions so that they are more sensitive to their effects on people and their groups and communities, and if we are going to help frame decisions that are more responsive to the needs of all the people in communities, we are going to have to be good at all three aspects of the social and environmental analysis process.

We must continue to improve our abilities in all three areas. All three aspects are skills. All are learnable. All are essential.



## IMPORTANCE OF SOCIAL VARIABLES

Margaret J. Boland  
Sociologist  
National Forests in North Carolina  
USDA Forest Service

In the Forest Service, at the Ranger District and Forest levels of the organization, scoping is becoming recognized as an increasingly important part of the environmental analysis process. Social variables are being taken into account in the scoping process and are often the most important factors in environmental analysis because Forest Service managers know how to apply mitigation measures so that most of the potential physical and biological adverse effects of decisions become insignificant. Problems have become "people" problems rather than "environmental" problems. Rangers and Forest specialists and staff continue to have difficulty evaluating social effects of decisions, however, because they are less comfortable with social variables than with physical and biological variables.

Determining the significance of social effects, especially if physical and biological effects have been mitigated to a condition of nonsignificance, remains a challenge for decision-makers. When insufficient information is available to determine significance, a risk analysis using a "worst-case" scenario may be required. The most recent legal precedents suggest that only if information is insufficient on the physical and biological effects will this "worst-case" scenario be required.

Even if physical and biological effects are not significant, however, determining the social effects of a proposed action continues to be a vital part of the scoping process. Understanding the social implications of various alternatives will help decision-makers to anticipate reaction to decisions and mitigate the potential adverse social effects.

HOW EXPANDED SCOPING CAN MAKE ENVIRONMENTAL ANALYSIS  
MORE SOCIALLY RELEVANT

Melvin J. Bobier  
Economist  
U. S. Forest Service

Summary

The National Environmental Policy Act of 1969 (PL 91-190) requires a systematic, interdisciplinary approach towards environmental analysis that integrates natural and social sciences and design arts. The Council on Environmental Quality (CEQ) guidelines now require that the degree of impact of a proposal be determined through scoping, an early public examination of the general potential effects of a proposed action and various alternatives, by which decisionmakers are made aware of public concerns so that they can deal with them adequately in environmental documents.

More extensive use of scoping has led the Forest Service to shift from strict reliance on voluminous ecological impact statements that stress documentation and give greater weight to air, water, and land systems rather than social values. It is moving, instead, towards targeting significant social issues as they relate to the environment and incorporating more public values and insights. While technical analysis is still an important task for Forest Service social scientists, they are spending more time structuring the environmental analysis process around the critical, but often abstract, concerns of the public.

Introduction

Careful scoping improves the environmental impact process. After passage of the National Environmental Policy Act (NEPA) in 1969, the overall NEPA process--as well as the length of the environmental document itself--got out of control, as the Forest Service and other government agencies sought to comply with the law's intent. Though the documents were comprehensive and successfully described the ecosystem, few dealt adequately with those relevant concerns which have great impact on human life and the quality of the social environment.

In 1978 the Council on Environmental quality in the Executive Office of the President issued Regulations For Implementing The Procedural Provisions of the National Environmental Policy Act. In it the Council required scoping as part of the environmental impact process in order to provide more focus on the issues to be covered in the document. Section 1501.7 Scoping of the regulations called for "an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action." 1/

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1/ pp. 7, Section 1501.7 Scoping. Regulations For Implementing the Procedural Provisions of the National Environmental Policy Act, Reprint 43 FR 55978-56007, November 29, 1978, 40 CFR Parts 1500-1508.

In response, the Forest Service began to streamline its environmental analysis process and the Environmental Impact Statement document itself: page limits were set, certain categories of action although fully analysed were excluded from documentation, and project environmental assessments were written as specific supplements (tiered) to more encompassing NEPA documents. A soon to be incorporated amendment to the Forest Service NEPA Procedures Handbook will provide for even more emphasis on thorough, systematic scoping and will encourage increased use of the categorical exclusions. Chief R. Max Peterson of the Forest Service claims that this should reduce the number of documents and, therefore, the time amount of spent on proposals. This savings will enable the Forest Service to shift more attention to the analysis of major actions and, as a result, lawsuits and appeals on these actions can either be avoided or handled more effectively. 2/

The process of determining a reasonable range of actions has been emphasized by the Forest Service so that the energy put into the environmental analysis can identify and focus on relevant issues instead of merely presenting a catalog of all potential physical and biological conditions and their potential impacts. This is called scoping, a tool for minimizing adverse social impacts and for encouraging beneficial ones. Scoping sets the stage for further environmental analysis and helps keep the analysis on target.

People are part of the environment and part of the ecosystem. The revised process used by the Forest Service gives a more significant role to social scientists, working with environmental, community, and public interest groups during scoping, and designing the analysis to better reflect their concerns. No longer does the analysis require voluminous technical discussions for every item on a routine checklist. Emphasis has shifted from developing social analysis procedures to identifying social and cultural concerns and values and the impacts of land management proposals. Key issues are identified early, during the scoping process, insignificant ones eliminated, and more time is spent trying to structure the analysis around major critical concerns of the public. The social sensitivity of government decisionmakers improves during this process since considerable scoping takes place with the concerned public.

While it is not expected that the public will develop models or analyze data -- the job of the social analyst -- the public can add relevant empirical information and data and suggest alternatives for the interdisciplinary team to consider.

When these social and cultural concerns contribute to structuring the environmental analysis, the ecological data base stresses information that shows how alternatives affect social values as well as the balance of the environment. Under these circumstances, social factors must be identified early for use in developing alternatives. Before social

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2/ Chief's Opening Remarks Handout, Chief R. Max Peterson, Regional Foresters and Directors Meeting, Alexandria, Virginia; January 30, 1984.



concerns were properly included during the scoping phase, alternatives were frequently solidified before the social impacts were even considered. For this reason, the scoping process when properly done, helps avoid conflicts with the public, expedites implementation, and ensures commitment to decision: citizens are less likely to protest when they believe they have been treated fairly. Therefore, an environmental analysis that confronts social issues early on can save money and effort.

### Short Shift to Social Impact

In an environmental analysis process directed and dominated by forest resource experts, the Forest Service has historically underutilized social analysis. While some social knowledge transcends the biological and physical disciplines, the social scientist's special expertise has generally not played an important role in decisionmaking in the past. Therefore, the inclusion of social analysis has heretofore been the exception rather than the rule. Social consequences considered during the environmental analysis have been limited. Effects on certain endangered species have been studied much more than impacts on human lifestyles. This results partially from the more abstract nature of social science data and language in comparison with the more objective, concrete data and language used in the physical/biological sciences. This dichotomy can be ameliorated, to some extent, by describing situations in more concrete terms. For example, landscape architects can more easily provide guidance for mitigating the aesthetic impacts of logging cuts in an area described in objective, well-defined terms rather than "a beautiful viewshed", which is more emotional.

Consideration of general social impacts of a project is not and should not be limited to environmental impact discussions. But the Council on Environmental Quality (CEQ) Regulations, designed to implement the National Environmental Policy Act approach, have been accepted and institutionalized. By now the environmental analysis process is familiar to and accepted by both friends and foes of resource development projects. So when social factors are considered, they are most likely discussed in the resulting document (EIS).

One might think that preservation groups would be more concerned about broad social impacts than they have been in the past. But, unfortunately, social values, with some exceptions, are not as apparent or as quantifiable as physical effects. Furthermore, the effects of humans on the natural environment are perceived by some preservation groups to be essentially the problem.

Generalizations and universal approaches are suspect to project critics; clear, immediate issues garner the most support for a cause. For example, the apparent effects on the environment resulting from harvesting timber is usually more dramatic than social impacts. Therefore, social impacts have a far less vital effect on the outcome, unless they are politicized.

Moreover, social concerns are not usually an important element in the training and inclination of forest managers. Natural scientists have

what they perceive to be clear, definable ideas about analysis methods. Unfortunately, stylized checklists, charts, and models designed by natural scientists offer an unbalanced framework frequently not useful for integrating comprehensive social analysis. At the same time, when allocating time and money for environmental analysis, the apparent ease of categorizing the ecological approaches overshadows relevant social issues.

Social issues, straitjacketed within the ecological categories, often invite inappropriate analysis, which lack reference to assumptions, and underestimate social consequences. Therefore, simply including more sociologists in interdisciplinary teams will not solve the problem - especially if the social scientist must work within frameworks that effectively exclude social analysis as do those that are strongly oriented to the physical environment.

The impact evaluation process should emphasize issues, including social ones, which come to light during environmental scoping. Unless this is done, the environmental impact statement simply becomes an information base: very sophisticated in some technical areas such as population forecasts, but unrelated to concerns that matter most to local people - such as overcrowding of schools, overuse of recreation areas, and change in community character.

This dilemma leads to confusion between how to study impacts and what to include in an environmental analysis and is a major reason for the social irrelevance of many statements. For the decisionmaker predicting impacts is only one part of advance preparation. Yet the Forest Service concentrates almost exclusively on carefully tracing environmental effects through the environmental linkage system, stopping short of applying this knowledge in an attempt to determine the effects on the social fabric. It is true, at times, that a more complicated analysis is often proposed where achieving consensus on values grows less and less probable. But more sophisticated technical analysis can't make up for lack of concern about on abstract values when dealing with such emotional concerns as herbicide use and new roads.

#### Including Social Concerns

The inclusion of social concerns in the environmental analysis process entails changing the analysis process. The nature of information being presented makes this inevitable. It is difficult, if not impossible, to deal with social impacts quantitatively; but this does not relieve us of responsibility. The most useful social knowledge is frequently abstract and splintered among several different disciplines. Moreover, the particular contextual nature of social knowledge also makes analysis difficult to formalize: substitute quantifiable measures cannot always be found for all relevant values. Nevertheless, the effects of these values need to be integrated into the process, despite the fact that this is difficult to do.

At present the Forest Service and other public agencies seem to be unable to make an evaluation without quantifiable social indicators in social analysis. The feeling is that social measures will improve



social concerns analysis by putting a number on them, and these measures integrating them more directly into the planning program. Otherwise, it is felt social values become intangible; and they are compared with tons of wood pulp produced. Objectively measured social variables may or may not be quantifiable. Most people automatically equate quantification with measurement and objectivity. They are in error.

Intangible as they are, there is nothing vague or insubstantial about community disintegration or the quality of human and social life. Looking for precise, rigorous measures is at times a way to ignore the reality of the disruption to the social order and is an excuse to not deal with mitigation or compensation issues. Unfortunately, relevant social information usually makes decisions more, not less, difficult.

### Targeting on Key Issues

While social impact evaluation will never and should never replace physical and biological effect assessments under the CEQ regulations, the Forest Service is shifting away from strict reliance on voluminous ecological impact statements that do not consider social values and that stress documentation and methodology and give greater weight to air, water and land systems without consideration of social values. It is moving towards those targeting significant social issues in proper relationship to other environmental factors and incorporating more public values and insights. The former uses less prioritization and pays too little attention to issues of local concern such as impacts on ethnic, cultural, and other social groups. While technical analysis is still an important task of Forest Service social scientists, they are spending more and more time structuring the environmental analysis process around the critical, but often abstract, concerns of the public.

In line with this, the Forest Service documented direction in the Forest Service Manual 1973 - Social Impact Analysis was published in 1982. It's stated "primary goal is to help managers take into account social concerns in making decisions." The procedures for implementing this were published in September, 1973 as Chapter 30 - Social Analysis of the Economic and Social Analysis Handbook 1909.17.

When social values become important for structuring environmental analysis, emphasis shifts from statistical data bases to information that helps show how alternatives mesh with public values and affect the whole human environment. That is the purpose of NEPA. Under these circumstances, earlier inclusion of social factors for developing planning alternatives is needed. Input is required at the point where fundamental decisions are made. While this approach may open some bothersome issues, the end result will be a more socially relevant environmental impact statement that will meet NEPA's intent.

### Conclusions: Benefits of the Focused EIS

Social and environmental factors and their degree of importance in a particular proposal are identified through scoping. This explicit identification allows for accomplishing a focused analysis that will, in turn, ensure that the important environmental effects are given full,



impartial evaluation. With this evaluation an informed decision can be made that will not result in unforeseen impacts on the human environment.

Additionally, the focused analysis provides affected citizens and decisionmakers with an overview of alternatives that will clearly identify potential consequences on specific social groups within the population. Finally, the focused analysis legitimizes the explicit concern for social groups suffering adverse impacts. The Forest Service must support its decisions with relevant supporting data. The social impact assessment procedure helps to do this: it identifies human concerns with which to build a factual framework. This is useful decisionmaking. This analysis also more effectively identifies necessary mitigation measures.

Moreover, focused social impact analysis procedures are ways of examining each alternative as it meshes with existing, formally adopted Forest Service policies. It also illuminates gaps in the policy framework that will need closing. Over time the Forest Service will be better able to evaluate its ability to make and follow policy and make the necessary adjustments.

Through careful integration of the natural and social sciences and the design arts, policies of the Forest Service for managing public lands can be effectively carried out. The agency has used the natural sciences and the design arts with a fairly high level of effectiveness. But it hasn't yet integrated the social sciences into its planning processes as successfully. This is a recognized shortcoming of all federal agencies. CEQA, in order to correct the deficiency developed scoping allows us to tailor each project to meet the immediate needs of the resources and society as they relate to the mission of the Forest Service through recognition of the needs and concerns of the affected publics. The Forest Service cannot have single-minded, definable objectives for every project. Every project's circumstances are unique. Relevant objectives for the project are developed through the scoping process. This process allows us to develop plans for each case that will meet the objectives of NEPA. The results are better decisions that accommodate the needs of the human environment by incorporating and accommodating the concerns of the public whose lands we manage.

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SOCIAL ANALYSIS IN AGENCY PLANNING AND DECISIONMAKINGINTRODUCTION

by Barbara T. Osgood  
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One indication of the "coming-of-age" for social analysis at the agency level is whether or not it is used as a basis for agency planning and decisionmaking. In the past, agencies have frequently failed to make use of the kind of information that social analysis can provide. For example, a 1977 study of 80 randomly-selected environmental impact statements found that "Social research methods or techniques could be found in only 13.5 percent of the cases; a logical, explicit social relationship could be found in only eleven percent of the cases; and planning for long-term impacts was present in only 21.3 percent of the EIS's."<sup>1</sup>

Part of this reluctance to use social data is probably due to a lack of communication between those who have been instrumental in agency planning and decisionmaking in the past and the newly-arrived social scientists. Engineers, natural scientists, and other technical specialists who deal with explicit quantitative data have found it difficult to understand and accept the kinds of qualitative data, field techniques and statistical analyses that are the accepted tools of the social scientist. Social analysis, therefore, has been viewed as too "soft" or unreliable to be useful in planning and decisionmaking.

The last decade has seen a gradual change in these attitudes. There is some recognition, at least, that social analysis has a role to play in agency program planning and policy development. Natural resource agency managers, in the context of policy and legislation such as the National Environmental Policy Act, have come to realize the benefits of understanding the social environment of their activities as well as the natural environment. The need for public acceptance of agency programs and policies, public participation in program and project implementation, and coalition-building among public and private sectors has provided the incentive for managers to look to social analysis for assistance.

The following papers provide information on how social analysis has been integrated into activities of such agencies as the Soil Conservation Service, the Forest Service, the Bureau of Reclamation and the Bureau of Land Management. It seems clear that the validity of social analysis in agency activities has been established although the extent of integration probably varies by agency and by area of concern. It remains to be seen whether this influence will remain constant or increase over time and whether agencies will continue to view social analysis as a significant input to planning and decisionmaking.

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<sup>1/</sup> Wilke, Arthur S. and Harvey R. Cain "Social Impact Assessment Under NEPA: The State of the Field" Western Sociological Review. Vol. 8, No. 1, (July, 1977) pp. 105-108.

Integrating Social Analysis with Agency Planning and Decisionmaking:  
The Soil Conservation Service

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The integration of formal social analysis into agency planning and decisionmaking is relatively new to the Soil Conservation Service (SCS). Because it was established as a natural resource agency, SCS has traditionally depended upon natural resource information on soil and water conditions as a basis for soil conservation planning and activities. Data such as soil erosion rates, rainfall rates, soil characteristics and flood levels are familiar inputs for policy formulation and project development.

More recently, economic and environmental analyses have become significant to SCS planning and decision making, especially in the area of water resource project activities. Current Federal policy emphasizing cost effectiveness and economic benefits, exemplified in the Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G), and the National Environmental Policy Act (NEPA), have added requirements for economic and environmental data to basic natural resources data needs. Both NEPA and P&G have also provided the impetus for including social analysis in the water resources planning process: as the "Other Social Effects Account" described in P&G, and the assessment of the social environment directed by NEPA.

In 1980, SCS formally recognized sociological concerns with the establishment of a Social Sciences Staff, now part of the Economics and Social Sciences Staff, at the National Headquarters level. Subsequently, two sociologist positions have been added at the National Technical Center level. In addition to NEPA and P&G, there have been other incentives for doing this:

1. Emphasis in the National Program for Soil and Water Conservation on targeting, program effectiveness and developing teamwork approaches at the state and local level.

Targeting is a new approach in SCS in which areas of greatest need for conservation are identified, so that program activities can be concentrated there. Targeted areas frequently include farmers and landowners who have not requested SCS assistance in the past and have not voluntarily applied conservation practices. Sociological analysis helps us to understand who these landowners are, and why they have not participated in conservation. This information enables us to plan information and assistance activities that can be effective in encouraging greater participation and adoption of soil and water conservation practices.



2. Recognition that adoption of conservation practices by farmers is not a totally economic decision, and that social factors may be significant also.

Recent research on the adoption of soil and water conservation practices indicates that there are numerous factors associated with the adoption process. Many of these factors are sociological: attitudes toward conservation, agrarian ideals, management capabilities, perceptions of farm problems, community attitudes, institutional constraints and peer group influences. Awareness and knowledge of these social factors contribute to policy and program development that recognizes the differences among various farmer-landowner groups and provides for enough flexibility to address these differences with a wide range of implementation strategies.

3. Interest in the market approach to "selling" conservation, in which target clientele are identified and characterized as to needs, abilities and attitudes toward conservation.

In the past, SCS program implementation activities have been addressed to farmers and landowners as a group, with little explicit recognition that the agency's clientele is really composed of numerous subgroups or clienteles such as absentee landowners, part-time farmers, corporate farmers, minority farmers, etc. More recently, there has been an interest in applying the principles of marketing to soil conservation, in which program implementation strategies are designed to address the needs, abilities and attitudes of the specific target group. Sociological analysis gives us information about these needs, abilities and attitudes so that effective strategies can be developed.

Social analysis in SCS can be roughly divided between structural (project) and conservation application (nonproject) activities. In the structural area, the agency may be involved in the construction of dams or channels for flood prevention, or soil erosion control structures, such as sediment basins. Social analysis is integrated into the planning process to address such questions as:

- o Who "pays" and who benefits?
- o What are perceived social costs and benefits?
- o How can public participation be effective?
- o How can for adverse social impacts be mitigated?
- o Where are likely sources of conflict?
- o How can equitable decisions be made in allocating scarce resources?

For these structural activities, the social analysis examines the public affected, documents social costs and benefits, and makes recommendations for actions that can be taken to reduce conflict and mitigate adverse impacts.

In the area of conservation application, both project and nonproject, social analysis takes a slightly different perspective, because the project cannot be implemented without landowner participation. A dam or channel can be built with little active participation by a majority of the landowners (the sponsors of the project may be a very small group), but the application of conservation practices to the land necessitates a high level of participation and personal investment of time, energy, and funds. The focus of social analysis in this setting, then, is to identify the potential levels of conservation application and how these levels might be increased by asking:

- o Who benefits and how?
- o What farmer needs can be addressed, and how can the program/project be adapted to these needs?
- o What are farmer/landowner attitudes toward proposed practices or activities?
- o How can targeting efforts be more effective?
- o How can high levels of voluntary participation be achieved?
- o What are the short and long-term benefits of resource conservation?

Social analysis can make a significant contribution to soil and water conservation because it provides information about the needs, abilities and attitudes of the varied clientele with whom the agency interacts. In a voluntary program, this information is necessary to develop policies, plan projects and implement activities that will provide opportunities for high levels of participation and involvement by farmers and other landowners. These people will not become involved unless they feel that their needs are being met, that they are capable of acting, and that their values and attitudes are considered.



APPLIED SOCIAL ANALYSIS RESEARCH PRODUCTS OF  
THE INSTITUTE FOR WATER RESOURCES: 1970-1984

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DEFINING TERMS AND PROVIDING GENERAL TOOLS

- 1974 Social Impact Assessment: An Analytic Bibliography, 74-P6.  
The Corps' practical requirement for social impact assessment raises a fundamental problem of knowledge for sociology and related social science disciplines. This report, an "analytic bibliography" of materials relating that knowledge to the Corps' concern is a first step in making accessible and useful the growing body of social research that can illuminate the problem of social impact assessment and approaches to its solution.
- 1974 Social Science Data Banks and the Institute for Water Resources, (IWR Pamphlet No. 1).  
This report contains information about the content, usage and location of social science data banks. The study shows how data banks might be of specific value to the Corps in its endeavors to assess the social impact of their projects on community life.
- 1975 Social Impact Assessment: An Overview, 75-P7.  
The report seeks to present an overview of the basic assumptions, priorities, methodological strategies and techniques, procedures of data collection, organization and analysis for conducting social impact assessment as a part of the entire project assessment process.
- 1976 Contracting for Social Impact Assessment, 76-1.  
This report discusses the problems associated with traditional contracting procedures when applied to new and challenging fields, such as the analysis of the social impacts of public works projects. The report, which draws upon recent experiences of Corps of Engineers planning procedures and contractor personnel, includes a general discussion of the typical contracting process utilized by the Corps in contracting for professional services, and chapters dealing with market development and contractor selection, development of scopes of work, and maintaining and integrating contract results with other planning activities.
- 1977 A Research Strategy for Social Impact Assessment - A Tale of Three Cities, 77-R2.  
This report demonstrates an approach to social impact assessment based on the differential response of various communities to the stimuli of construction and operation of a major public works project. The report is one of continuing series of studies of the impacts of the completed

McClellan-Kerr Arkansas River Navigation System conducted by the Corps of Engineers. Three small communities along the waterway are studied through analysis of archival data. Each community has responded uniquely to the presence of the waterway, and the report documents analyses which relate these responses to hypothesized differences in the fundamental structure of the communities.

1977 Sources of Information for Social Profiling, 77-9.

The first step in doing an SIA (Social Impact Assessment) is to profile the impacted area in terms of specific social variables. This handbook is designed to show how impacted areas can be quickly and inexpensively profiled. The critical variables are identified and the sources of information for these variables are located. An example of this profiling is included for illustration.

1977 Analytical Review of Research Reports on Social Impacts of Water Resources Development Projects, 77-3.

This analytical review of research reports on the social impacts of water resources development projects is designed to assist planners in identifying and evaluating the impacts of project actions. It helps maximize the use of existing research results and methods by presenting summaries (of the research done to date) at various levels of generality. It also identifies the implicit patterns of research in the area and suggests questions for future research on the social impacts of project actions to address.

1978 Reference Guide to the Census Bureau (Program and Data), 78-R1.

This report outlines some of the programs of the Census Bureau that provide data useful for individuals involved in research and planning. The report is divided into 6 major sections: (1) a general overview of the Bureau's programs and geographic levels; (2) a review of the 1970 decennial census with sources for information on the 1980 and mid-decade censuses; (3) a brief discussion of the economic, agriculture and government recurring censuses; (4) a section concerning surveys; (5) a description of additional programs, including publications and illustrative examples of maps; and (6) appendices including addresses and contact persons for Summary Tape Processing Centers, Federal and State Cooperative Program for Local Population Estimates, in addition to individual names and telephone numbers of subject matter specialists at the Census Bureau. To assist the reader, an index is provided.

1978 Doing Social Effects Assessment: Two Cases From a Corps Field District, 78-R4.

This case study is intended to complement the "how to do social effects analysis" thrust of recent manuals. It describes how a sociologist, working in a Corps of Engineers district, approached social effects assessment on two studies. The report describes both management and technical considerations involved in these assessments. It takes the reader through the step-by-step historical process of doing social effects assessment.



- 1979 Analytical Review of Research Reports on the Social Impacts of Water Resources Development Projects, 79-1.  
Much discussion, analysis, and speculation surrounds social impact analysis in water resources planning. This study examines all available post-audit studies that have found linkages between water development projects and social impacts. It then analyzes and reviews these impacts by the type of study, location, and project. The report is meant to be a reference guide for field planners tasked with doing social impact assessment. Several quick reference tasks keying into the main body of analysis are available to the planner who desires to use this report as a reference tool in specific projects.
- 1980 Institutional Analysis (DRAFT).  
This handbook enables a study manager or study team member to conduct an institutional analysis, or to monitor a contract requiring a consulting firm to perform an institutional analysis. The approach includes the steps necessary for carrying out such an analysis, sources of information upon which to rely, and a section on theory for those who wish to investigate further.
- 1980 Policy Profiling (DRAFT).  
Policy Profiling is a technique for assessing the impact of various individuals, groups, and organizations on decisions that the Corps routinely makes. The technique can be applied in workshop or group decision-making setting; it can also serve as the basis of a formal information system using staff members or outside respondents. This package introduces the basic concepts of Policy Profiling. It shows how the technique can be applied to planning, regulatory and operational decisions of the Corps. It contains several examples and exercises to aid you in applying it to many different potential decisions.
- 1982 Values Mapping (DRAFT).  
This paper is a description of the current state of values research as it could potentially be applied to public involvement in governmental decision-making. The bias throughout has been that of the practitioner: the review of the literature has been made with an eye towards immediate practical application, rather than careful definitional work which may be important to the long-range development of a field, but lacks immediate usefulness.
- 1982 Social Science Prospectus (DRAFT).  
This prospectus is designed to provide a clear description of how social scientists can contribute to the U.S. Army Corps of Engineers, and suggest those areas in which social science expertise can be most valuable.

#### MEASURING SOCIAL EFFECTS

- 1977 Population Change, Migration and Displacement Along the McClellan-Kerr Arkansas River Navigation System, 77-5.  
The overall purpose of this segment of the McClellan-Kerr Impact studies was to identify and analyze the impacts of the navigation system and its

reservoirs upon population change, especially migration. In order to accomplish this task, the project was divided into three phases of work.

- 1978 Chief Joseph Dam Community Impact Report, 78-3.  
This report provides information to planners, Government officials and others concerning the possible economic and socio-economic effect communities may experience as a result of raising the pool and installation of additional hydroelectric units at Chief Joseph Dam, Bridgeport, Washington.
- 1978 Chief Joseph Dam Community Impact Report - Update I.  
The purpose of this report is to update the Army Corps of Engineers February 1974 Chief Joseph Dam Community Impact Report and identify the probable places of residence of the 2,200 new population projected for the "impact" area.
- 1978 Chief Joseph Dam Community Impact Report - Update II, 78-3.  
The study provides a case history of impact problems arising from a large scale construction project and how these problems were solved. The study reviews practical methods for projecting these impacts, ways of financing mitigation efforts and ways to avoid future problems.
- 1978 Chief Joseph Dam Columbia River, Washington, Community Impact Report Update III, Conditions at Peak Impact, 78-R2.  
This report examines how current peak construction social impacts at Chief Joseph Dam, Washington compare with those projected in pre-construction phases. The report examines, in depth, the construction workers at the dam site; their previous employment, current living conditions and impacts on local communities. The report also generalizes about the methodologies for projecting social impacts.
- 1979 Impact of Dam and Lake Construction on Rural Economies, 79-R4.  
This report is an assessment of the social and economic impact of five dam and lake projects constructed by the Corps of Engineers at five lake projects - four in Kansas, and one in Missouri.
- 1980 Social Impacts of McClellan-Kerr Navigation System: A Study of Public Sector Response to Water Resource Development, Contract Report 80.  
This study uses the concept of community to analyze the "impact" of the McClellan-Kerr Navigation Project. Selection of this perspective was based on the belief that various consequences took place through a sequence of events that involved various structures within the particular cities along the Arkansas River.
- 1981 Report of Survey of Corps of Engineers Construction Workforce, 81-R05.  
This survey of the Corps of Engineers construction workforce has two primary objectives: (1) to develop an empirical basis for determining employment benefits due to construction of Corps projects; (2) to develop an empirical basis for determining the socioeconomic impacts of the workforce utilized for Corps project construction on local communities. This study is based on a 51-project sample selected from 136 projects under construction during 1979.



1983 Employment Benefits Research at the Institute for Water Resources.

This paper reports on the status of research on the impact of construction projects on unemployment. To set the presentation of the research into a proper context, conceptual and methodological issues associated with measuring the use of otherwise unemployed workers are first reviewed. IWR research efforts are then described, and a series of employment benefits estimation procedures which have been derived from the research are presented. Finally, the other areas of continuing and proposed research related to the topic of the employment effects of Corps construction projects are discussed.

1984 Replacement Employment Impacts of Corps Construction Projects, Final Report, 84-C-1.

The objective of this research was to develop a procedure for measuring the replacement employment impacts of Corps construction projects. Conceptually these effects refer to the employment opportunities associated with job vacancies created when employed workers leave jobs to take employment on corps construction projects. Such vacancies may allow a chain reaction of employment upgrading as underemployed or otherwise unemployed workers move into vacated jobs. The report presents a methodology for measuring replacement employment effects which relies heavily on secondary data on interindustry labor mobility and interindustry earnings differentials coupled with data obtained from workforce surveys.

EXPANDING PROJECT EVALUATION BEYOND TRADITIONAL MEASURES

1971 An Information System for Improving the Evaluation of Nonmarketed Outputs, 71-5.

This report develops a systematic procedure for identifying and evaluating a range of environmental and social impacts which generally cannot be adequately evaluated in dollar terms.

1977 Methods for Evaluating Non-Market Impacts in Policy Decisions with Special Reference to Water Resources Development Projects, 77-8.

This working paper explores the as yet intractable problem of accounting for non-market impacts in policy decisions especially in the context of water resource development projects. In the first section, 19 methods will be presented and critiqued in general terms. In the second section, the social impacts of water resource projects will be reviewed and related to the 19 valuation methods. In the final section a number of critical issues involved in valuing non-market impacts will be discussed.

1980 Human Costs Assessment - The Impacts of Flooding and Nonstructural Solutions: Tug Fork Valley West Virginia and Kentucky,

This study comprises the human resource costs of flooding, and the capacity of local publics for effective participation in an alternative housing opportunity program. The objectives of the study were to assist the Huntington District with the development of methods to formulate and evaluate innovative strategies for the solution of long-standing

flooding problems in the Tug Fork River Basin in West Virginia and Kentucky.

1984 Human Costs of Flooding - Jackson, Mississippi

This IWR support study at the request of the Mobile District is an estimate of human costs of flooding. It was first used in a 1980 IWR study of a flood in the Tug Fork Valley of West Virginia and Kentucky, for the Huntington District. In that prototype study contractors at Cornell University, in departments of economics and sociology, were tasked to design items, and develop a methodology which would provide an empirical estimate of the "human costs" due to flooding.

DEVELOPMENT OF MIXED STRATEGIES FOR WATER RESOURCES MANAGEMENT

1978 Hill Reestablishment: Retrospective Community Study of a Relocated New England Town, 78-4.

This study retrospectively analyzes the 1940 relocation of Hill, New Hampshire. The process and techniques of relocation and the social, political and economic impacts of the relocation are examined over three time periods: pre-relocation, relocation-construction, and post relocation.

1981 Community Handbook on Flood Warning and Preparedness Programs, 81-R06.

1981 Implementation Aspects of Flood Warning and Preparedness Planning Alternatives, 81-R07.

The objectives of the investigation were to shed light on the policy and procedural considerations related to planning, implementation and operation of flood warning and preparedness alternatives and to suggest implementation approaches. A review of the legal liability issues involved in implementing and operating flood warning system is included.

1981 Effectiveness of Flood Warning and Preparedness Alternatives, 81-R08

The purpose of this report is to shed light on the question of the effectiveness of flood warning and preparedness alternatives and to suggest means of improving effectiveness. It is also intended as an aid to those considering the investigation and formulation of a community-level flood warning and preparedness alternative.

1981 Relocation as Process: A Social Psychological Perspective, 81-R01.

The purpose of the report is to assess the relocation process from a social-psychological perspective. The author's intention is to examine the process of relocation as involving at least three sets of people: (a) those who define and implement relocation; (b) the people who are most directly and immediately involved--potential relocatees and the network of businessmen, neighbors, and others with whom their lives are interwoven; and (c) the larger community.

1981 Nonstructural Flood Control Measures: A Sociological Study of Innovation, 81-R03.

Four of the major flood plain management measures--insurance, zoning,



flood proofing, and warning systems--are discussed from the social perspective. An overview of the causes and effects of the various measures on policy agents, flood plain occupants, and the general community is provided. The final chapter presents specific recommendations to the Corps.

#### ORGANIZATIONAL ANALYSIS AND DESIGN

##### 1982 Report of Engineering Division's Blue Ribbon Committee

#### Training

##### 1981 Social Science Training for Water Resources Engineers and Planners, 81-W1

This paper briefly outlines a successful approach to training experienced engineers to use selected social science techniques. Its philosophy is to add tools to the existing tool-kit of the engineer-manager, and to build on his/her experience.

##### 1983 Advanced Public Involvement Training Course

##### 1983 Negotiation, Bargaining and Conflict Management

##### 1984 Applied Social Analysis and Regional Development Training Course

#### PUBLIC INVOLVEMENT

##### 1970 Public Participation in Water Resources Planning, 70-7.

This report focuses on the development of water resources in relation to the role of the planner in communicating and interacting with the public in planning. The report describes the institutional and behavioral aspects of planning as a process of social change.

##### 1970 The Susquehanna Communication-Participation Study Selected Approaches to Public Involvement in Water Resources Planning, 70-6.

This report presents an effort to introduce and evaluate selected approaches to public involvement in the Susquehanna River Basin Study. Public involvement activities centered upon establishing a program of linked contracts between agency planners and local residents through a series of planning workshops.

##### 1975 Public Involvement in the Corps of Engineers Planning Process, 75-R4.

This report discusses the design, implementation and management of public involvement programs as integral parts of the Corps of Engineers water resources planning process. The report includes chapters on developing public involvement programs, forums for obtaining citizen input, guidelines for developing public information programs, monitoring and evaluation of programs, and staff organization and budgeting for public involvement activities.

- 1975 Public Participation in Water Resources Planning: An Evaluation of the Programs of 15 Corps of Engineers Districts, 75-6.  
This report contains an evaluation of the public involvement programs of 15 selected Corps of engineers field offices. The report includes descriptions of public participation programs existing in 1973, an evaluation of District policies, organization, and resources for public participation, and recommends methods for improvement.
- 1978 Why the Federal and Regional Interest in Public Involvement in Water Resources Development, IWR Working Paper 78-1.  
This paper moves beyond the simple description of legal and regulatory requirement explanations for public participation. It explains deeper reason relating to making the bureaucracy responsive to social values. The paper presents a case for public involvement in practical, managerial terms based on theoretical concepts of democracy and planning.
- 1978 Public Involvement and Social Impact Analysis: Union Looking for Marriage, IWR Working Paper 78-2.  
Often public involvement and social impact analysis are considered separate. Indeed, they operationally are usually distinct functional activities within agencies. This paper examines how these functional activities actually complement one another. It develops a conceptual framework for integrating public involvement and social impact analysis with reference to specific water resources development cases.
- 1982 Public Involvement Techniques: A Reader of Ten Years Experience at the Institute for Water Resources, 82-R1.  
The genesis for this reader was two-fold: (1) a recognition that a great deal of material had been developed for IWR-sponsored training programs which many practitioners inside and outside government believed represented an important contribution to the field of public involvement, and therefore deserved publication; and (2) a desire to provide recognition to IWR's contribution to the field over the past decade.

#### FUTURE RESEARCH DIRECTIONS (1985-1986)

Non-Property Based Benefit Measurement Procedures  
Enhancing Employment Effects of Corps Construction Activities  
Developing Survey Research Center

#### ORDERING DOCUMENTS

Documents may be obtained upon request by writing to:

Water Resources Support Center  
Corps of Engineers  
Publications Division  
Casey Building  
Fort Belvoir, VA 22060-5586

## PUBLIC PARTICIPATION PROGRAM

W. Thomas Harlan  
Forest Service - USDA

Public participation is a legally required opportunity for the public to comment on proposed activities of the Forest Service.

### Legal Requirements

The National Environmental policy Act of 1969 and the National Forest Management Act Amendment to the Forest and Rangelands Renewable Resources Planning Act (1974) both require the opportunity for the public to comment on proposed projects, programs, and activities.

### Program Goals

The goals of public participation are:

To help the Forest Service reach better decisions;

To inform the public of Forest Service activities, plans, and decisions;

To encourage public understanding about and participation in the planning and decision process by providing information;

To be aware of and be responsive to the values of the publics we serve, and to evaluate how these publics will be affected by decisions;

To ensure that the Forest Service understands the needs and concerns of the public;

To broaden the information base upon which agency decisions are made.

To accomplish these goals, there are some basic tenets that must be followed. Public participation has to be an integral part of any planning, program, or project rather than a separate procedure. It must begin at the earliest stage possible, and be included in all stages as appropriate. It can assist in identifying and resolving problems, assessing needs, planning strategies and developing work plans, gathering data, formulating alternatives and estimating their consequences, analyzing, evaluating, and comparing tradeoffs among alternatives.



Public affected by or interested in the proposal must be identified and encouraged to participate. Public participation planning must be flexible, and tailored to fit the need. Public recommendations must be addressed and responded to in a visible manner. All public participation activities must be documented.

The Process. Public participation starts with communication. Individuals and groups must be identified as well as the networks that allow communication to happen. Once lines of communication are open, issues can be identified, messages clarified, and perhaps potential hostilities diffused.

A public participation plan must be prepared to ensure that appropriate levels of activities occur at necessary times. This also includes the time that written public response will be collected. Prior to closing dates for comments, an analysis plan must be developed that will provide a systematic way to process written responses. The decisionmaker must evaluate the public response in light of legal, fiscal, resource capability, social and political realities, and available technology. When decisions are made, the public must be advised. Documentation must be done of public participation activities and management decisions.

Benefits. There are benefits to good public participation. Among them are an opportunity to open lines of communication with the public resulting in a public more knowledgeable about Forest Service activities, and an agency more attuned to public needs.

## SOCIAL ANALYSIS IN RECLAMATION PLANNING AND DECISIONMAKING

by

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Abstract: A recent update in Reclamation planning instructions illustrates the role of social assessment and of the social analyst in planning decisionmaking. The update was motivated primarily by a change in Reclamation's planning to the Two Stage Planning process. The role of social assessment in the Two Stage Planning process is described in some detail. The update was also influenced by changes in Federal Principles and Guidelines for water planning and by changes in social assessment technology, each of which is briefly summarized.

### Introduction

The Bureau of Reclamation began organizing its approach to social analysis as part of water resources planning in 1973. This effort resulted in the first formal set of Reclamation Instructions which detailed procedures to be used in the social analysis portion of the Reclamation planning process in 1975. We have just completed the first major update of those instructions since 1975.

This revision in our instructions on social analysis responded to three major factors. First, a change in the overall Reclamation water resources planning process was implemented with the streamlined Two Stage Planning Process. Second, there was a need to respond to the new Federal Principles and Guidelines for water resources planning. And, third, there was a need to respond to the rapid changes in the level of sophistication in the technology of social analysis. Each of these three factors was considered in terms of how it influenced the planning-decisionmaking process and the ways in which social analysis could more constructively contribute to that process. The first of these factors will be described in some detail in this paper; the latter two will be briefly reviewed.

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## TWO STAGE PLANNING

Reclamation's Two Stage Planning Process was born in an effort to streamline water resources planning and to improve the quality of decisionmaking. With this philosophy at the core, each technical discipline routinely involved in our planning teams' efforts was charged with the responsibility to examine its process to determine which kinds of information were important to making what kind of decision. Only information critical to the decision to be made at a particular point in the process was to be collected, analyzed, and the results made available to the planning team.

Two Stage Planning reflected a formal recognition that many different decisions are made at different points in the water resources planning process, and that these decisions can and should be made with different levels of technical information available to the planning team. Two Stage Planning was designed to clearly identify and define the major decision points in the planning process, thereby permitting both the public and the planners to have a better sense of just where they are as the planning investigation unfolds. The two stages of the Reclamation project planning process are the Planning Stage and the Advance Planning Stage. Each stage has several key decision points.

### Planning Stage

#### 1. The Plan of Study

The Planning Stage begins with the preparation of a draft Plan of Study (POS) by a planning team located in either a regional or a project office. The draft POS is submitted to the Washington Office for policy review and to the Engineering and Research Center for technical review. Following this review, a planning conference is held during which both policy and technical problems are ironed out and formal approval to begin the Planning Stage is given.

Like the other technical disciplines, the social discipline is expected to provide a detailed description of how the social portion of the planning investigation will be conducted in the POS. This description is expected to include a preliminary statement of the social problems, opportunities, and needs relevant to the planning investigation in the planning area, the methods to be used to collect and analyze social data, the ways in which important social factors will be identified and analyzed, the ways the social analysis will interface with the overall public



involvement program of the planning study, the ways in which the social analysis will be documented and made available to the public, and the level and kind of social analytic effort anticipated for different points in the study process. As with all disciplines, the emphasis in the POS is upon insuring that only the social information critical to a particular decision being made at a given point in the planning process is being collected and analyzed.

## 2. The Preliminary Findings Report (PFR)

After the planning begins, the first important decision point is the PFR. The PFR requires that the planning team demonstrate that at least one viable plan can in fact be formulated. The Social Analyst's responsibility is to demonstrate that that plan is viable from a social perspective. Typically, this requires a demonstration that no fatal social flaws exist in the plan.

## 3. The Plan Formulation Working Document (PFWD)

The next step in the Planning Stage is the plan formulation process which is documented in the PFWD. The PFWD provides the information on all alternative plans formulated to solve the water resource problems of the planning area. It also includes the tradeoff analysis between alternative plans which results in selection of a preferred plan. This selection, of course, is the critical decision at this step in the process.

The Social Analyst has several responsibilities during the plan formulation and preferred plan selection process. First, the analyst must contribute any social information critical to the formulation of alternative plans. Any special social problems, needs, or opportunities for which plans or portions thereof may be formulated must be identified so that they can be brought into the overall formulation process. Then, alternatives formulated to meet any objective must be analyzed for their social impacts.

Because of the complexity of multifaceted water resource plans, this analysis process may be repeated (iterated) several times in an effort to formulate plans with the best possible combination of features to meet multiple objectives. The tradeoffs between and among alternatives (including future without plan conditions) must be analyzed with a "bottom line" produced for each plan from a social perspective. Finally, the technical documentation for the

social analyses must be prepared along with the social portion of the PFWD.

#### 4. The Planning Report/Environmental Statement (PR/ES)

The final step in the Planning Stage is preparation of the PR/ES. This combined planning report and environmental impact statement is used by Reclamation for two purposes. It will be submitted through the Commissioner's Office to the Secretary of the Department of the Interior. Upon Secretarial approval, it is submitted to the Office of Management and Budget for approval as part of the Administration's program. Upon approval, the report is then transmitted to the Congress for project authorization. Also, during this process, the report is submitted to the Environmental Protection Agency in conformance with the National Environmental Protection Act (NEPA) compliance process. Thus, the PR/ES also serves the NEPA disclosure purpose. Project authorization by Congress completes the Planning Stage of the Two Stage Planning Process and ushers in the next stage, the Advance Planning Stage of the process.

#### Advance Planning (AP) Stage

Preliminary work for the AP Stage may actually begin well prior to completion of the Planning Stage. As soon as there is concurrence on a preferred plan (PFWD step), the planning team may be given approval to begin work on an AP Plan of Study (APPOS). This means that the two stages of the two stage process are not temporally consecutive; rather, the two stages overlap in time. This overlapping is an important feature in streamlining the water resources planning process by avoiding some of the time delays previously encountered between project authorization and funding appropriation for advance planning activities. By overlapping the two stages, the planning team is ready to move into advance planning activities as soon as funds are appropriated.

As was true of the Planning Stage, several important decision points are identified for the AP Stage.

##### 1. The Advance Planning Plan of Study (APPOS)

The major task of the AP Stage is refinement of the selected plan--working out the details necessary to move from a fairly abstract conceptual level to the initiation of project construction. The focus of the APPOS likewise is on how the planning team intends to refine and work out the details of the plan selected for implementation.

From the social perspective, this means getting progressively more specific about the social impacts and mitigation features which are to be included in the plan. In the APPOS, the Social Analyst is responsible for describing how the specific details will be analyzed, impacts quantified, and specific social mitigation features will be worked out with the affected publics. The Analyst is also responsible for defining the time, effort, and expertise requirements which will be required for the social analysis portions of the AP activities.

## 2. The Verification Memorandum (VM)

The purpose of the VM is for the Regional Director to assure the Commissioner that the essential details of the selected plan are still correct or to advise of any important changes which could affect decisions regarding the details of the approved plan. The Social Analyst's contribution to this effort includes verifying the details of the social impacts of the selected plan and mitigation features for adverse social impacts which have been worked out. Also, advice regarding any unmitigatable adverse social impacts should be updated or previous analyses further verified.

## 2. The Advance Planning Report (APR)

The purpose of the APR is to define the characteristics of the plan to be implemented in sufficient detail to be able to turn over the the project construction engineer for implementation. The Social Analyst's task at this point in the process is to define those details of project implementation necessary from a social perspective to attain the social benefits previously planned for and to avoid or to mitigate, where possible, the adverse social effects. Typically, this requires working closely with the people most directly involved (e.g., individuals and families requiring relocation services, local planning agencies, school districts, social services agencies, municipalities) to prepare for the influx of construction workers into the local communities.

The Social Analyst is also responsible at this step for recommending whether a social impact monitoring program needs to be established for some or all of the construction period. If such a program is recommended, the features are outlined at this point so that a decision regarding responsibilities for monitoring program implementation may be made.

Finally, should a decision be made that a supplement to the environmental statement is required at this point, the Social



Analyst is responsible for any required updating of the social impact analysis.

### 3. Public Involvement and Social Analysis

The Two Stage Planning Process is designed to maximize public participation and involvement in the water resources planning process. A formal Public Involvement Plan is a required part of both the Planning POS and the Advance Planning POS submitted by the planning team for approval.

The Planning Team Leader is formally charged with the responsibility for planning and implementing the public involvement process. Thus, the Reclamation planning process distinguishes between public involvement and social assessment, with the latter being the responsibility of the Social Analyst member of the planning team.

However, it is also recognized that because of the nature of social assessment work the social analyst will often become aware of public issues or areas of controversy before some of the other planning team members. Because of the Social Analyst's professional expertise and orientation, close cooperation and coordination between the public involvement and social assessment efforts are required. The Team Leader often uses the Social Analyst to be a special consultant on public involvement activities, from planning to implementation and evaluation. Similarly, the nature of some of the Social Analysts' work brings them into direct contact with the public. This contact becomes a public involvement activity--a point of contact between the planning team and members of the public--even though it is primarily designed as a social data gathering activity. Thus, the professional data gathering activities of the Social Analyst must be known to the planning team and team leader and be built into the overall plan of public involvement activities.

Thus, the Reclamation planning process recognizes both the separateness of public involvement and social assessment and the critical points of interface between the two.

### Federal Principles and Guidelines

In addition to implementation of the Two Stage Planning Process, changes in the Federal procedures for water resources planning required changes in the social planning instructions. The new Principles and Guidelines (P&Gs) to be used by Federal agencies for water resources planning reflected several changes in planning practices. These

changes were designed to simplify the earlier Principles and Standards (P&S).

Two changes made by the P&Gs were of special significance to Reclamation Social Analysts. The first made the use of the social account (along with the environmental quality account and the regional economic development account) optional for Federal agencies to use or not as they chose. This left the national economic development account as the only required account.

We decided that, due to the desire on the part of the Bureau of Reclamation to formulate water resource plans which were responsive to the social needs and concerns of the affected publics, use of the social account would not be optional; rather, it would be required in every Reclamation planning report. Provisions were made for ways to meet this requirement using only the most modest effort if it was deemed professionally correct to do so in the context of a particular planning investigation. But at least a minimal examination of social consequences is required in all planning investigations.

The other change made by the P&S was to rename the social account as the "Other Social Effects" Account. Reclamation Social Analysts objected to this name for their account on the grounds that it reflected a miscellaneous, afterthought character to what they regarded as an important part of the overall planning process. Parenthetically, it might be noted that the intent of the framers of the P&Gs in using this name for the account was to reflect their view that all the accounts reflected certain social effects; the intent of the Other Social Effects account was to capture those social effects not contained in the other accounts. Reclamation Social Analysts, nonetheless, felt that this thinking would be lost in practical application. As a consequence of their reaction, it was decided that we would meet all of the requirements of the newly named account and, thereby fully implement it, but would retain for Reclamation purposes the more simplified name of "Social Account."

### Changes in Social Assessment Technology

Improvements in the practice of social assessment seen across the field have been mirrored in changes in Reclamation social assessment procedures. Having benefited from over a decade of practical experience along with insights gained from the work of many others, we were at the point where it seemed appropriate to codify these benefits into our formal planning instructions. This, then, was the third impetus for

rewriting the Social Investigations portion of Reclamation Planning Instructions.

Perhaps the social area was more comfortable with the idea of having to deal with apparently noncommensurate values than were some of the other technical disciplines typically involved in water resources planning. In any case, we were ready to tackle the problem as it presented itself to the social area and, after, some effort, we developed a procedure which has worked even in some particularly troublesome cases.

The procedure is known as the Multiattribute Tradeoff Analysis System (MATS, for short). It is a computer assisted procedure for making tradeoffs between different values. (The details are covered in a Reclamation Planning Instruction, PI 82-16. A copy of both this Planning Instruction and the more general one mentioned earlier in this paper will be made available by the author upon request).

Briefly, the procedure requires that the objective changes induced by a particular plan be quantified (at least by some scaling process) and that conditions of relative desirability of such changes be defined. The former is defined by the social analyst, the latter by the different publics involved so that their values are those which are reflected in the analysis. Tradeoffs are analyzed by a series of interrogations which systematically lead the person through comparisons of a given amount of change on one factor with changes in other factors. The program then computes the rank order of alternative plans as a consequence of the interaction between the person's values and the objective changes produced by each plan. Sensitivity analyses of individual evaluation factors are easily produced. The interactive features of the program make it easy for an individual to adopt different value orientations in order to determine what the consequent changes in plan ranking might be.

The MATS process has been useful not only in technical tradeoff analyses, but also as a tool for facilitating negotiation and compromise in value-conflict situations. Previously, it was difficult to keep facts and values separate in conflict situations. This process requires such a separation and thereby focuses the discussion at the points of real conflict. Reasonable negotiation, fairly reflecting the true differences in a conflict is often (though not always) facilitated using the process.

While designed originally for the social analysis portion of Reclamation planning investigations, the usefulness of the



MATS approach is not limited to the social arena. Some of the more successful applications have involved combinations of engineering, economic, environmental, and social factors. As experience with MATS accumulates, it is anticipated that even greater use might develop in decisionmaking and conflict resolution realms outside the purely social.

## III.

SOCIAL AND ECONOMIC MITIGATION POLICIES AND PRACTICES  
IN FEDERAL AND STATE AGENCIESINTRODUCTION

by Molly S. Brady  
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Purpose of Panel Session

Adverse community impacts resulting from large scale development projects have been extensively studied and documented, particularly since the enactment of the National Environmental Policy Act (NEPA) of 1969. Despite recognition of these adverse impacts, there is very little consensus among policymakers on what federal and state government agencies ought or ought not to do about these impacts. Responsibilities of governmental entities to mitigate adverse physical/biological impacts are relatively straightforward. However, identifying appropriate actions and responsibilities for mitigating socioeconomic/cultural (community) impacts remains controversial and unsettled.

Social and economic impact mitigation policies and practices vary significantly among programs at both the federal and state level. The nature and extent of government intervention to alleviate adverse community impacts arising from rapid growth (or decline) does not appear to follow any clearly discernible pattern or to be based on any set of objective criteria.

The purpose of this panel is to provide a framework for rationally explaining the variations in federal and state mitigation policies and practices and to present a thorough discussion of several agency programs which vary significantly in their community impact mitigation approach.

Framework for Explaining Variations in Federal and State Government  
Community Impact Mitigation Policies and Practices

The nature and extent of federal and state government intervention to help communities cope with adverse socioeconomic impacts can generally be described as ranging from reactive (or passive) to proactive (or active). This concept is visually displayed as a continuum in Fig. 1.

FIGURE 1.



It is often possible to locate where a particular government program/agency falls on the continuum but it is not always clear why one agency program is more proactive (or reactive) than another. However, it is possible to explain an agency's posture with respect to mitigation by examining the various internal and external influences affecting agency policymakers. This is often referred to as force field analysis. The assumption is that at any point in time an agency is influenced or forced by a number of factors to develop policies and procedures which are either proactive or reactive. The strength of opposing influences one way or the other will determine where an agency program will fall on the continuum.

Variations over time can be explained using force field analysis. For example, changes in the economic environment can have a substantial affect on an agency's policy/procedural posture. Communities may demand significantly less from federal or state government agencies if they are experiencing high unemployment. Thus, it is necessary to be sensitive to the economic environment in order to understand changes in strength of forces for active or passive mitigation.

Variations within an agency (from one state or region to another, for example) can also be explained. Basically, if policy and procedural decisionmaking in an agency is highly decentralized and influences vary across place, then mitigation policies/procedures are likely to reflect those variations from place to place. On the other hand, a highly centralized agency program is more likely to respond to a single set of influences and develop a consistent mitigation approach from place to place.

Another phenomenon which can be explained using force field analysis is the existence or non-existence of clear legislative authority to mitigate community impacts. If, during the formulation of legislation



for a particular program, the influencing factors for a more active intervention role are strong, it is possible that legislative mandates for community impact mitigation will be established. Policy and practices are developed at different stages (e.g., formulation, adoption, and implementation). The forces may vary from one stage to another. Thus, the legislating body's intent may be significantly distorted by an administrator's implementation strategy if influencing factors undergo a radical shift between the formulation and implementation stages.

The advantage of using a force field analysis to explain (in retrospect) the variations and apparent inconsistencies in the way government entities approach community mitigation is that it enables policy analysts to better predict and adjust to changing influences. Basically it provides a tool for examining alternative mitigation strategies and finding the equilibrium point on the continuum. Furthermore, it eliminates some of the confusion in the debate about community mitigation by simplifying a relatively complex issue.

#### Plans for Further Investigation of the Force Field Concept

As part of the panel, an open-ended questionnaire was distributed to attendees on mitigation in agency programs with which they are familiar. This questionnaire is reproduced here.\* Readers are encouraged to complete the questionnaire and return to:

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Responses to the questionnaire will be used in an attempt to further refine and test the force field analysis hypothesis. All information will remain confidential. A summary of the findings will be distributed to respondents and other interested individuals.

#### Introduction to Panelists

Panelists were selected on the basis of their agency's perceived proactive/reactive posture on mitigation. The intent was to include one relatively passive federal agency program (BLM's mineral leasing program), one relatively active federal agency program (DOD's economic adjustment program), one relatively passive state agency program (Texas's low level radioactive waste disposal program) and one relatively active state agency program (Wyoming's industrial siting program). Unfortunately the representative from Texas was forced to cancel at the last minute. Nevertheless, the panelists provide a spectrum of mitigation approaches which reflect the variation in influences on their programs. Hopefully, the attendees and the readers of the panel proceedings will be able to better understand the variations and apparent inconsistencies in approaches by considering them in the historical context of the influencing forces which shaped their programs.

\* Printed as Appendix A at the end of this volume.

## DEFENSE ECONOMIC ADJUSTMENT PROGRAM

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### Introduction

The Office of Economic Adjustment (OEA) was established within the Office of the Secretary of Defense in 1961. Throughout the past two decades, OEA's mission of assisting local communities to accommodate significant changes in defense presence has remained unchanged. But the U.S. Department of Defense's (DoD) interest and involvement in impact mitigation (what OEA terms "economic adjustment") predates World War II. Therefore, a brief history leading to today's program is appropriate.

### History of Department of Defense Mitigation Activities: 1940 to 1970

In 1940, a law was passed authorizing the Federal Works Agency (FWA) to provide adequate housing in targeted communities to help local defense plants avoid labor shortages. A second law was passed that year authorizing FWA to provide public facilities that would enhance "defense production efforts." During WWII, the Army Corps of Engineers built at least three new communities to house and promote the atomic energy program. These communities were later sold off by the federal government. The oldest set of federal legislation still in use that addresses impact mitigation affects all federal agencies: support for building and maintaining public schools. Because DoD has the largest federal presence throughout the country, it is particularly relevant here. In fact, DoD will share the responsibility for implementing these laws with the U.S. Department of Education beginning in FY 85.

OEA is DoD's first full-time program devoted exclusively to economic adjustment. During the 1960's OEA's very limited staff provided expert consultant type services to impacted communities: perspectives on community assets, liabilities, public organization, development opportunities, and advice on federal government aid. OEA strengthened its critical intergovernmental coordination capacity by becoming the executive secretariat of the President's Economic Adjustment Committee (EAC) when it was formed in 1971; the Secretary of Defense was designated as the Chairman. As federal economic development program resources grew, EAC member agencies' involvement in defense impacted communities produced increased levels of federal funding; typically for redeveloping surplus defense installations into industrial facilities.

### Evolution in the 1970's

Two growth impacts occurred during the 1970's that set the current tone for DoD adjustment assistance. Individual laws were passed that required DoD financial support for those public facilities and services that were needed as a result of the deployment of the Safeguard missile and Trident submarine systems in the states of North Dakota and Washington respectively. The key elements of these laws permitted DoD funding in those cases where the need for new facilities and services were in large part induced by the additions of DoD personnel to the local economy and where the cost of providing them would cause a net financial burden on the local public sector. Further, all DoD funds were required to pass to the communities through existing federal agency programs.

Several specific lessons were learned from OEA projects in this period:

- Local leaders must assume active leadership of the adjustment program.
- Even the most rural communities were becoming sensitized to the inherent public and private sector risks associated with growth that can be effected by exogenous variables (eg. weapons treaties and technological obsolescence).
- Well publicized energy impacts throughout the West were demonstrating and disseminating local communities' methods of mitigating the "boom-bust cycle".
- Appropriate local, state and federal government assistance must be identified and coordinated for maximum effect.

### DoD Mitigation Approach of the 1980s

In the 1980's many of the EAC members' resources diminished or disappeared. As DoD's budget grew (for military personnel and weapon systems but not for economic adjustment) relative to theirs, it became apparent that more direct OEA intervention, particularly in growth impact situations, was necessary. At the direction of Congress, OEA led an EAC supported study to assess future approaches for the defense economic adjustment program. Twelve options were studied, and five were found at least minimally acceptable for implementation. The legislation requesting this study also required DoD assistance for the communities neighboring the MX missile and Trident submarine systems in Wyoming and Georgia. The form of assistance was patterned on the Safeguard and earlier Trident projects, but permitted direct DoD funding of community facilities and services when domestic federal sources either do not exist or are insufficient to provide adequate support for the required public project.



Also critical to current economic adjustment programs are the improving economic impact forecasting techniques. OEA now works with the involved military service during the service's Environmental Impact Statement process to assure that the socio-economic element is adequate and conducive to OEA's follow-on Fiscal Impact Analysis (FIA). FIAs forecast the "unfair and excessive financial burden" on host communities. They estimate population dispersion, income, tax payments, consumerism patterns, employment impacts, public facilities and services needs and associated costs, and possible sources of assistance. Consistent with DoD's growing intervention and emphasis on strategy development in advance of impact, OEA now is also permitted to support planning efforts when there are insufficient sources of help in communities slated to encounter significant but not overwhelming defense related impacts.

#### Key Elements of DOD Program

To summarize, the key elements of DoD's economic adjustment program are:

- reliance on community organization and leadership
- reliance on inter- and intragovernmental cooperation
- reliable and realistic impact planning efforts
- implementation of creative and responsible impact mitigation strategies

COMMUNITY MITIGATION, MINERAL DEVELOPMENT,  
AND THE BUREAU OF LAND MANAGEMENT

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Development of federally-managed energy minerals, particularly coal, in the American West has resulted in significant local social effects for both communities and individuals. This paper portrays social-economic mitigation activities of the Bureau of Land Management and the Department of the Interior in mineral leasing situations. Included is a brief introductory presentation on mineral leasing, followed by a discussion of the principles which guide the Bureau's mitigation practices and the institutional setting in which these activities take place.

Background on Mineral Leasing and Community Effects

The federal government owns and manages much of the mineral resources in the West. This reservation of title occurred in the late 19th and early 20th centuries as a result of homesteading patterns, the various pieces of legislation under which private title was acquired, and ongoing geological exploration which broadly established mineral resource potential.

To direct the development of these resources, the Mineral Leasing Act was passed in 1920. The Mineral Leasing Act (and its amendments) lays out the general process which the Department of the Interior uses to lease such minerals as coal, oil, gas, oil shale, and phosphate that are owned by the government. Mineral leasing has been extensive, resulting in significant levels of production.

For example, coal production for the entire United States in 1983 was 784 million tons. Six western states (Montana, North Dakota, Wyoming, Colorado, Utah, and New Mexico) produced 216 million tons, 27% of total U.S. production. Within these six states, production from federal leases was 105 million tons, 13% of total U.S. production and 49% of the region's production.

Construction and operation of the mines and power plants dependent on these federal coal resources provide both direct and indirect employment. Population levels have in turn increased, sometimes dramatically, in many small towns throughout the region as industrialization has taken place. Given the often limited capacities of these communities to provide services and facilities and to absorb social structural changes, it is evident that rapid growth can potentially be quite disruptive. Local officials, responsible for planning, budgeting, and programming, and residents, both long-term and newcomers alike, must deal with issues previously unencountered in historically agricultural areas.

## Principles Guiding Mitigation Activities in the Bureau of Land Management

The Bureau of Land Management does not have an explicit policy on community mitigation and, all things considered, such a policy is not expected to be forthcoming. However, there are several central concepts which are applied on an operational basis in mineral leasing situations. Several of the potential actions within these concepts are discretionary and thus field managers possess the ability to approve, disapprove or modify mitigation proposals submitted either from publics or from within the agency. Applying a couple of these principles is not discretionary. There is really no decision to be made because Congress has precisely specified the action to be taken by the agency.

### Acknowledgement of Main Community Mitigation Responsibilities

There is common agreement that ultimately the responsibility for dealing with community changes brought on by federal mineral leasing rests at the community, county, and state government levels. Budgeting and programming of local services and facilities is rightly the province of local elected and appointed officials.

The issue is defining the proper role of the federal government, particularly Interior and BLM, in assisting and cooperating in these local activities. There is no clear consensus with regard to resolution of this question. Indeed, given widely variable state and local authorities, lack of tight Congressional direction, limited case law and inconsistent legal opinion, a range of corporate postures relative to mitigation, and diversified managerial attitudes, a murky situation is quite understandable.

### Identification and Assessment of Community Effects

The National Environmental Policy Act requires federal agencies to prepare disclosure documents, environmental assessments, as part of decision-making on major projects. As a means of alerting and informing key publics on the general implications of potential decisions, this process is clearly a mitigation device, though so ubiquitous that it often is not recognized as such.

A significant aspect of BLM's NEPA-compliance work on coal leasing and mitigation is the absence of tangible project information. Such information would allow greater forecasting precision and greater utility to local publics. Competitive leasing assessments, however, do not carry detailed data on proponent, scheduling, workforce, and similar factors. Such documents tend to be quite generalized, relative to permitting reports, and the social and economic analysis is built on numerous assumptions.



### Local Involvement

Governors' offices are represented on Regional Coal Teams, executive groups that direct regional leasing through recommending production goals, tract ranking and selection, and establishing sale schedules. Also, the Federal Land Policy and Management Act requires Interior to consult and coordinate with state government in preparing land use plans.

These mechanisms insure that state and local officials are included in federal mineral leasing processes. As these persons must respond to potential community effects of development, it is proper that they have central roles in the leasing program.

### Community Expansion

The Federal Land Policy and Management Act authorizes land sales, exchanges, and conveyance of lands to local organizations and government units for recreation and other public uses. There are occasional situations in which communities, with limited space in which to expand, take advantage of these provisions to acquire needed real property. This measure was used in Rangely, Colorado, to assist the community in responding to nearby mineral development and the need for more local housing by making available land suitable for subdivision.

### Revenue Redistribution

The Mineral Leasing Act required the federal government to return 37-1/2% of its mineral revenues to the state in which production occurred. The Federal Coal Leasing Amendments Act increased the states' share to 50% of bid and royalty funds from coal, while the Federal Land Policy and Management Act increased the level to 50% for oil, gas, oil shale, and other leasable minerals.

In fiscal year 1983, \$450,000,000 was returned via this formula to the states for funding local service and facility needs caused by mineral development and related population effects. However, there has been some dispute within states as to whether state legislatures faithfully distribute these funds according to the locations of the social and economic effects.

### Special Stipulations

The Mineral Leasing Act authorizes the stipulation, or conditioning, of leases for "the safeguarding of the public welfare." Lease stipulations have been used to provide assistance to local communities. Examples of such stipulations are requiring the lessee to appoint community affairs officers, prepare monitoring reports, comply with valid and applicable state and local laws and regulations, and the like. However, the use of such stipulations is quite controversial within Interior. At

most, they will be attached to leases only on a case-by-case basis when local officials request them and they will not involve requirements for direct subsidies or prepayment of taxes from the lessee to local authorities.

### Relationships with Other Institutions

Addressing those social and economic consequences of natural resource developments that are subject to intervention involves multiple governmental jurisdictions and the private sector. Design of any general strategy and application of measures within these strategies must take into account the abilities and inabilities of other parties in the process to implement measures. This section summarizes the relationships between the Bureau of Land Management and several of these parties relative to community mitigation.

#### Other Federal Agencies

After federal coal leases are acquired but before production begins, project developers must obtain numerous federal and state permits. The Interior agency most directly focused on mine plan permitting is the Office of Surface Mining, which completes its permitting in concert with state authorities.

The dilemma within Interior is that OSM, operating under the Surface Mining Control and Reclamation Act of 1977, lacks authority to stipulate permits for mining but typically possesses sufficient project information to propose mitigation measures with some finesse. BLM, under the Mineral Leasing Act and its amendments, has broad, discretionary authority in this area but, at the leasing stage, there is little known about how the development would be implemented. Analysis of effects is limited by detailed project information. There is no entirely satisfactory method, given present legislation, to resolve this disparity between agency authorities and project information.

The Forest Service has been quite conservative in its community mitigation activities. Lacking explicit authority to condition permits for mines and recreational developments, the Forest Service, at least in the Rocky Mountain Region, has explicitly and publicly disavowed any role in mitigation beyond facilitation of collaboration between developers and host communities.

As in BLM, renewable resource (timber, range, watershed, wildlife) management programs within the Forest Service seldom cause radical community changes. Typically, the effects of management are quite subtle and do not merit mitigation attention, except perhaps to alter timber sale schedules to protect communities from economic jeopardy. Such activity is authorized within the Forest Service.

## Indian Tribes

The Navajo in New Mexico and the Northern Cheyenne in Montana have proposed that BLM condition its coal leases to insure that the tribes and their members benefit from the proposed developments. Their proposals have included such measures as preferential hiring, preferential contracting, direct financial assistance, and similar requirements.

These proposals are presently being reviewed within BLM and Interior.

## State Governments

A couple of the western coal states, notably Wyoming and Utah, have very strong industrial siting laws designed to secure the interests of host communities. Basically, in these states, industry must negotiate settlements on mitigation measures with local public officials. Montana has a fragmented permitting environment, with power plants and surface mines falling under different laws. A Coal Board distributes part of the state's severance tax funds to communities.

North Dakota and New Mexico have developed impact assistance boards which also distribute state severance tax funds to applicant localities. Colorado relies on county and municipal governments to represent the interests of host jurisdictions. The state role is mainly coordinative and facilitative between developers and host communities.

The essence here is that this variety of state programs and policies makes it difficult and unwieldy for a federal agency to uniformly address mitigation across states. Appropriate action in one state does not make sense in another state. This necessitates a discretionary, flexible approach within the Bureau of Land Management.

## Local Governments

As stated previously, eventually local officials bear most of the responsibility for dealing with community changes brought on by energy development. These persons must, dependent on state laws and permitting environment, negotiate with the developer, prepare applications to state and federal agencies which distribute severance tax and grant funding, work with the local business community to assure responsiveness, and represent local taxpayers.

One Colorado county, Garfield, requires a fiscal impact statement from developers which analyzes the full array of service-facility demands attributable to the project, expected expenditures, and projected sources of revenue. This is an unusual



resolution, however, that apparently is perceived as unneeded or undesirable elsewhere and may be largely an artifact of Colorado's reliance on local government processes to resolve mitigation issues.

### Project Developers

Energy companies have different corporate personalities. Some are quite closed and voluntarily undertake only minimal mitigation activities. Others are more responsive, open, and collaborative. Even these positions are variable across states, dependent on state and local permitting environments.

Regardless, companies have participated in a wide array of mitigation programs. Housing, work camps, employee transportation, health programs, community planning, recreation programs and facilities, schools, utilities, and other local services and facilities have been subsidized by energy companies, seeking a more liveable environment for their employees and less unfavorable attention from residents, the media, and legislatures.

Bill Metz of Brookhaven National Laboratory has been very active in documenting the efforts of industry to assist in the mitigation of adverse social and economic effects of mineral development in the West. His articles describe an extensive and impressive series of local programs, voluntary and required, that have been funded by corporate developers.

ACHIEVING AGGRESSIVE MITIGATION THROUGH STATE REGULATION:  
A CASE OF THE WYOMING INDUSTRIAL DEVELOPMENT  
INFORMATION AND SITING ACT

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Introduction

This paper will address mitigation in a state which has an aggressive industrial siting act controlling the development of large, primarily energy-related industries in the state. Since the oil embargo in the early 1970's spurred energy development in this country, the energy producing states of the Rocky Mountain region have found it necessary to develop institutional arrangements by which "boom town" type situations could be avoided, or at least minimized. Socioeconomic mitigation, in particular, in the Rocky Mountain West has focussed on alleviation or minimization of the traditional problems associated with rapid population growth. The state of Wyoming had the dubious distinction of hosting two of the most notorious modern day "boom towns", Gillette and Rock Springs. Kohrs (1974) focussed public attention on Gillette, coining the term "Gillette Syndrome", a term referring to the alienation and anomie experienced in "boom towns". Gilmore and Duff (1975), along with the popular press and television (most notably 60 Minutes), brought Rock Springs to the public eye. These towns represented a host of problems that could be expected with energy development in other towns. Other states in the region also had the ingredients for modern-day "boom towns": Colorado, Utah, Montana, and North Dakota, for instance. Thus, it was in the context of rapid energy development with two prime examples of the negative impacts of rapid development on communities that Wyoming passed the Industrial Development Information and Siting Act of 1975. This act has become the backbone of Wyoming's aggressive approach to socioeconomic mitigation.

Industrial Development Information and Siting Act

The Industrial Development Information and Siting Act created an Industrial Siting Council and the Industrial Siting Administration (ISA). The Industrial Siting Council consists of seven members serving six year staggered terms. The Council is appointed by the Governor (with the consent of the Senate), but by law no more than four members can be of the same political party. In the past, Council members have, in general, been drawn from geographic regions of the state where energy development has occurred. The list below shows the region and occupation of the current Council members.

<u>Region</u>	<u>Occupation</u>
Oil and Gas Area	Rancher, Land Developer, County Commissioner
Oil and Gas Area	Banker
Trona and Coal Area	Developer, Entrepreneur
State Business Center	Lawyer

<u>Region</u>	<u>Occupation</u>
Coal Area	Retired - Oil Business
Recreational Area	Attorney - Entrepreneur
Recreational-Coal Fringe Area	Rancher

The Industrial Siting Council is the most important component of the industrial siting process. The Council conducts the permit application hearing, receives testimony from the applicants and staff, determines the conditions under which a permit is issued, and votes on the issuance of the permit for construction if the applicant has successfully demonstrated that the project conforms to the act.

The Office of Industrial Siting Administration consists of a director, a special assistant attorney general and a technical staff (a sociologist, an economist, an ecologist, an engineer, and one open position previously a socioeconomic specialist). The ISA staff's job is to review the applicant's plans and proposals in early stages of project development, review permit applications to ensure all aspects of the environment have been covered adequately, make recommendations to the Industrial Siting Council, and to inspect and monitor compliance with the conditions of the Industrial Siting Permit - once issued. Informally during these processes, the ISA staff is interacting with local officials, planners, state and federal agencies, consultants, and the permit applicant to ensure that all relevant topics are included in the siting application, that assumptions used in the application (such as household size, population multipliers, etc.) are reasonable and acceptable, and that a mitigation plan is being worked out well in advance of the Industrial Siting Council hearing. The technical evaluation and recommendation by the staff and director of the Industrial Siting Administration is non-binding on the Industrial Siting Council's decision on the issuance of a permit.

The act requires that an environmental assessment be carried out and filed with the Industrial Siting Administration in the form of an Industrial Siting Permit Application. This document is similar to an environmental impact statement with the general exception that the socioeconomic sections are more detailed. The act requires that the applicant demonstrate that:

- A. "The proposed facility will comply with all applicable laws;
- B. the facility will not pose a threat of serious injury to the environment nor to the social and economic condition of present or expected inhabitants within the affected area; and
- C. that the facility will not substantially impair the health, safety, or welfare of area inhabitants." Emphasis added (Industrial Development Information and Siting Act Rules and Regulations 1983, p. 15).

When a project is expected to impact the environment or the welfare of the area population, mitigation is required.



### Mitigation

Mitigation is not addressed specifically in the legislation, but is brought up in the Guide to the Preparation of Permit Applications for Industrial Facilities (1981). "The permit application is an important document of record. The Applicant is therefore urged to give full attention toward rendering it a complete representation of the proposed facility, its social, economic, and environmental implications and including proposed plans and measures for alleviating adverse impacts" (emphasis added) (Industrial Siting Administration 1981, p. 8).

In the section of the guide entitled "Socioeconomic Monitoring and Mitigation", it is stated that "Based on demographic and economic projections and monitoring, the Applicant should summarize any mitigation programs directed toward reducing or compensating for socioeconomic impacts" (Industrial Siting Administration 1981, p. 15).

Mitigation plans address social and economic indicators outlined in the ISA guide. As stated in the guide, social conditions include: water treatment, sanitary waste disposal, solid waste disposal, housing, police and fire protection, medical facilities, schools, recreation facilities, transportation systems, mental health facilities, and social service facilities. Economic conditions include, but are not limited to, the following factors: upgrading of jobs and increased income, family and per capita income, unemployment and underemployment rates within the area of site influence, purchasing power of earnings within the area of site influence, short-term and long-term fluctuations in resource consumption and resource availability, employment dislocation and skill obsolescence, employment opportunities, diversity of economy and stability of various segments of the economy, and increased diversity of the economy (Industrial Siting Administration 1981, p. 17 and 18). Negative impacts in any of the above items represent areas for potential mitigation. Conspicuously absent from the above is any mention of quality of life, social well being, and social structure. Impacts in these areas are not generally addressed in the application or considered by the ISA.

It is mandated that the administrative head of each state agency attend Industrial Siting Council meetings and serve in an "advisory capacity" to the Council. Where applicable, the Council can authorize a given state agency to review relevant portions of the industrial siting permit application. This is primarily a check to insure impacts on a given state agency are taken into consideration in the mitigation plan.

Generally, by the time the Industrial Siting Council convenes a hearing on an application, the applicant working with local officials, agency heads, and the ISA staff, has worked out a mitigation plan. At the time of the hearing, it is desirable to have a mitigation plan in place and the endorsement of all affected political entities. Unresolved issues can be handled by the council as conditions of the permit, although it is generally preferable to have arranged an "out of court" settlement.

### Why Industrial Siting Legislation Works in Wyoming

There are a number of structural and non-structural reasons that mitigation works well under the Industrial Development Information and Siting Act. The structural reasons have their basis in the legislation and are outlined briefly below:

1. Strong regulation of siting and other regulations that enhance impact assistance (Joint Powers Act, Impact Assistance Act, severance tax, mineral royalties).
2. Organizationally, the ISA is responsible to the Governor and the council. It is not embedded under layers of bureaucracy in some other state agency.
3. The siting process is a legitimate process involving mitigation as a condition of a construction permit.
4. The siting process internalizes the cost of development to the developer.
5. The siting act mandates that the ISA staff monitor compliance with mitigation plans and permit requirements and that permittees supply annual reports on their projects. (A project can be halted for non-compliance to permit conditions.)

The non-structural reasons for successful mitigation include specific historical, situational and interpersonal conditions in Wyoming and are outlined below:

1. The same democratic Governor that was influential in passing the Industrial Information Development and Siting Act in Wyoming is still Governor of the state. He has a stake in the system functioning well and with a minimal amount of political interference.
2. Continuity of personnel in the ISA has established long-term personal working relationships between the ISA director/staff and company representatives, community representatives, agency personnel, and interest groups.
3. The industrial siting process has evolved from an adversarial arrangement to a more cooperative arrangement. The continuity of director and staff, changing economic conditions and familiarity with the process has probably contributed to this evolution.
4. The ISA and the council have adapted to the changing conditions in the state's growth areas ("boom towns" have reached some level of dynamic equilibrium) and the changing economic climate in the state (higher unemployment - minimal energy development). Mitigation arrangements have shifted from a focus on housing, public services/facilities, human services, and how these things would be funded to a focus on community cash flow and guarantees of the projected cash flow.

5. The Industrial Siting Council has never turned down a permit application - only specified the conditions under which the permits were issued.

The structural conditions outlined above, in combination with the particular non-structural conditions, have led to successful mitigation programs in Wyoming. Given the resource base in Wyoming, the low population density, a democratic Governor, the oil embargo of 1973, and two publicized negative examples of "boom towns" the development of strong industrial siting legislation was possible. Without these conditions or similar conditions, it is unlikely that such legislation could have been adopted in Wyoming nor is it likely that such legislation could be adopted in other states without a similar set of conditions.

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## CONTEMPORARY ISSUES IN SOCIAL IMPACT ASSESSMENT

### TEACHING SOCIAL IMPACT ASSESSMENT AT THE COLLEGE LEVEL

by

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This paper addresses the focus, need, rationale, content, location and audience for a college level course on social impact assessment (SIA). The author's perspective is sociological, but the wider contributions of the social sciences to the topic are also reviewed.

The substantive area labelled SIA grew out of a need to apply the knowledge of sociology and other social sciences in an attempt to predict "social effects" of environmental alteration for development projects subject to the NEPA (National Environmental Policy Act) legislation in the U. S. and EARP (Environmental Assessment and Review Process) in Canada. These legal and regulatory mandates required project proponents to assess the "social effects" of development in a variety of environmental impact projects in varying geo-political settings. Most of the early SIA procedures were developed by social scientists located within federal agencies or consultants hired by engineering and architectural firms that prepared the larger environmental impact assessment statements. Because information was needed quickly, social science concepts were applied to development events without a clear link to available research. The result was a checklist of social science concepts useful in getting the job of environmental impact assessment done, but having little connection to prior literature on community and cultural change.

More recently, SIA in the U.S. has opted for models that require such data as the number and type of new workers as an input to predict quantitative social changes in the geo-political area of impact (Leistritz and Murdock, 1981). The Canadian model focuses more on social action, with emphasis on helping the impacted population to adjust to impending change (Bowles, 1981). What roles university-based social scientists can and should play in the developing SIA field has remained a relatively open question.

#### The Focus of a Social Impact Assessment Course

This paper identifies two approaches to the teaching of SIA, one labelled generic and the other the project level approach. The generic approach to SIA is taught from the perspective of sensitizing students

to general social change. It assumes the presence of major impacts and a rather wide policy perspective. Furthermore, project impacts are seen as leading to radical shifts in the distribution of the population and in turn producing recognizable changes in how human groups relate to each other.

Implicit in the generic approach to SIA courses is the notion of understanding social change through experience. Being sensitive to the existence of social impacts is seen as more important than actually being able to identify them. Often the objective of the generic type of social impact assessment course is to get the sociological (or social science) point of view across to the non-social scientists.

The project level approach to teaching SIA assumes that social change is ubiquitous, but that a new project or policy change alters the normal flow of social change. Furthermore, this approach stresses that impact events will vary in specificity, intensity, duration, and a variety of other characteristics. It then becomes important for students to understand what will be the social impacts of a particular development rather than only being aware that social change will take place. By utilizing past social science research the student is better able to understand what is likely to happen to human populations given different impact events. The practical goal of social impact assessment is to anticipate likely areas of impact, to utilize the information in the planning process, and to plan appropriate mitigation.

The project-oriented course assumes that social impacts are most observable at the local level--at least the direct effects. For most social impact variables the measuring and interpretation works best the more restricted the area of study. A problem in both teaching and research is identifying the sequencing and duration of social impacts. For example, the rapid influx of construction workers is easily observed, but the gradual shifting of power from old timers to an outside agency is less obvious. An important goal of teaching SIA thus becomes one of identifying and understanding the consequences of change for human populations, given different types of impact events.

Although I favor teaching SIA within a project setting there are some problems in focusing on specific impacts. Namely, that not all social assessors will agree to the social assessment procedures outlined under NEPA and EARP. However, teaching SIA from the generic standpoint might produce a course with little applicability or one similar to those on social change or community development. Whichever approach is taken, the major concepts and research findings should come from the community and social change literature.

#### What can the University Contribute to the Teaching of SIA?

SIA training materials and workshops are offered by a number of land management federal agencies and consulting firms (Branch et al., 1983,

U.S. Forest Service, 1982, and Social Impact Research, 1983). What then, is left for a college level course? The following is a list of the more important contributions.

- a. Agency training is likely to be specific to a particular type of social impact setting (e.g., off-shore drilling or recreational development). Each agency must deal with the settings that their employees are likely to encounter even though a more general approach might be preferred. University teaching can show that similar types of social impacts occur in a variety of settings and through research establish empirical linkages.
- b. There appears to be minimal agreement among agencies as to the organization and procedures for doing both EIA and SIA statements. The college level course should emphasize a general approach that would be useful to a variety of organizations.
- c. Step-by-step procedures characterize the present approach by SIA and EIS practitioners. The substantive nature of the social impacts is seldom addressed during either training or implementation. College courses could help explain the likely social consequences of different developments and thereby connect the procedures of the environmental impact assessment to real life events.
- d. Many of the students who take an SIA course will not be social scientists, and the course will likely be their first exposure to the analysis and interpretation of sociological variables. I have found that students do not know what to look for in the way of a social impact variable. Therefore, they should first be taught what such variables are and then how to select and utilize them in impact analysis. Furthermore, the instructor should attempt to destroy the myth that social impacts which cannot be quantified are unimportant and should be dismissed. However, proselytization can be unproductive if the questions of engineers and planners about quantification are simply dismissed as irrelevant.
- e. Teaching SIA helps move the focus of the social sciences much closer to the reality of public planning and decision-making.

#### What Should be Taught in a University Social Impact Assessment Course?

I personally believe that SIA should be taught within a project or policy context as a substantive, knowledge-producing enterprise. In teaching SIA I have attempted to address the question... "What are the different social impacts in a variety of project settings and how can they be utilized in project decision making and/or in mitigating the impacts of development?" Below is a list of general topic areas that convey the essence of the material and can form the core of a college-level SIA course.



- What is social impact assessment?
- How does social impact assessment fit the planning process?
- The history of social impact assessment
- How does social science theory contribute to SIA?
- The initial social assessment (scoping)
- Steps in the social impact assessment process
- Integrating social impact assessment with the EIA process
- Social impact variables
- How are social impact variables measured and interpreted?
- Public involvement as a social impact assessment variable
- Developing mitigation measures for social impacts
- International applications of social impact assessment

It is important that the course not only deal with appropriate methods and procedures, but also include the most up-to-date research findings on a wide variety of social impacts. The major topics listed above form an agenda around which SIA research can be organized within or outside of a course. The goal of the course is for each student to be capable of doing social impact assessment and to understand social soundness analysis as practiced by the U. S. Agency for International Development (USAID, 1978) and the World Bank.

#### What Departments Should Teach Social Impact Assessment?

Except for a handful of universities (e.g., Washington State University, Texas A&M, Iowa State, and the Universities of Alabama, Illinois and Maryland) courses on SIA are seldom taught within either the anthropology or sociology curriculum. Many sociologists and anthropologists would probably say that SIA is what we have been doing all along, and that no more applied courses are needed. Rural sociology, for example, has a rich tradition of community/social change research that provides a large body of findings about how rural communities adjust to outside influences. Applied anthropology rightly claims that they have always studied social impacts, particularly where traditional and modern cultures meet. Such titles as "Old wine in new bottles," reinforce the notion that SIA is really a relabelling of what we have done all along (Carter, 1981).

SIA courses (or sections of courses) can sometimes be found in Landscape Architecture and Architecture, Environmental Studies, Urban and Regional Planning and Geography. In many cases, SIA is taught as an addendum to an existing planning course or as part of a course on environmental impact analysis. However, when taught within non-social science departments, the focus is likely to be on procedures (how to do it) rather than on understanding the nature of social impacts. This emphasis on procedures as opposed to analysis of impacts may be the crucial factor in distinguishing an agency workshop from the type of contribution that could be made by the social science teaching of SIA at the university level. For example, the matrix advocated by the Federal Environmental Assessment Review Office of Canada (FEARO, 1978) is widely

used within engineering to insure that all environmental impacts are considered. If included, social impacts are designated by either +, -, or 0. Their importance is quickly lost in the overall summary, particularly when summed against short run economic gain.

#### Who Should Take Social Impact Assessment Courses at the College Level?

We would hope that students interested in planning—and enrolled in departments such as those mentioned in the preceding paragraph-- would be first in line. These students need to understand how SIA and the planning process fit together. The monographs by Finsterbusch and Motz (1980) and Warheit, et al. (1977) document the importance of SIA in the anticipatory planning process.

For students who receive only introductory social science training, an SIA course offers the opportunity to learn about human responses to and societal consequences of technological change. Advanced undergraduate and master's level students drawn mostly from engineering and the physical or biological sciences would particularly benefit from such exposure. For these students, SIA might be part of a general course on the human consequences of technological change.

Future resource managers in state and federal agencies will need to know how to do SIA within the context of the EIS process. Students headed for these positions come from university departments of forestry, parks and recreation, fish and wildlife, water resource management, and conservation.

It may be possible, but not probable, to get a job with the title of Social Impact Assessor with either a federal or state agency. More likely, SIA responsibilities would be lumped together with public involvement, community relations, and general planning activities. One could be an SIA consultant. For example, doing SIA in Canada has turned into somewhat of a "cottage industry". At the First International Conference on Social Impact Assessment, held in Vancouver, B.C., forty-one percent (92 of 224) of the participants from Canada listed a consulting firm association.

If environmental impact analysis becomes a requirement for projects in developing countries, then persons who work with USAID (U. S. Agency for International Development) and the World Bank will need to know how to do social soundness analysis. The same social assessment requirements are emerging for international donor agencies from all developed countries. Any "national" from a developing country who gets involved with foreign assistance will also need to know about SIA.

Finally, if the content of SIA courses becomes accepted within the social science community, then the topic could be included in traditional social science curriculums. At present it can be taken as a graduate level concentration in the few universities mentioned earlier.

### The University Contribution to Social Impact Assessment

If SIA is to become something more than a response to government mandates, then relevant research questions must be conceptualized and a body of knowledge must begin to form around the topic. The objective of the SIA process is to anticipate and predict social impacts in advance of choices and events so that the assessor's recommendations may become part of the decision-making and planning process. However, sociological research has given scant attention to identifying and measuring social impact variables in advance. Social indicators were developed by social scientists in the 60's and 70's as a quantitative attempt to monitor social change and the general social health of the country. However, those measures were never widely utilized, because results were seldom valid below the state level. Besides, they assumed that the impact event had already occurred, which made the results useful only for after the fact policy adjustments.

Let me conclude by pointing out that the teaching of social impact assessment has some important benefits to offer the discipline of sociology. It does represent an important and continuing opportunity for sociologists to make a contribution in the policy arena. It does bring together sociologists both inside and outside the university. It does provide an opportunity for us to show how sociology can contribute in a meaningful manner to the solving of interdisciplinary problems. At present, the impacts that are identified by sociologists are best understood by policy-makers within the practical context of environmental decision-making. The larger social science community needs to legitimize SIA as a proper area for research and teaching even though its roots have been in applied problem areas. As the need for social science input to the anticipatory planning process is better understood, college level courses on SIA should become more popular.



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## LIMITATIONS ON SOCIAL IMPACT ASSESSMENT AT THE FEDERAL LEVEL<sup>1</sup>

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At a recent meeting of the District of Columbia Sociological Association, I had the opportunity to review more than a decade of Federal involvement in social impact assessment (Llewellyn, 1984). In essence, that presentation was an attempt to expand on some brief historical notes in Social Impact Assessment Methods (Finsterbusch et al., 1983) -- how we got started, where we are now, and what the future may hold. My feeling is that we may be rapidly approaching a critical juncture with respect to a strong Federal commitment to social impact assessment (SIA). Please bear with me now while I slip into my Chicken Little outfit to see how it looks in the mirror. The limitations I intend to address are not all-inclusive, new or unique; but they do pose serious problems.

### Failure to Understand the Significance of Social Impacts

From 1973-1975, while working for the National Bureau of Standards, I served as principal investigator on a study of the social and environmental effects of highways. In our efforts to develop a sourcebook on SIA for the use of highway planners, it seemed prudent to assess user needs; and part of that assessment included interviews with State and Federal Government transportation officials (Llewellyn et al., 1982). The results of those interviews are reported elsewhere, and need not be repeated here; nonetheless, one clear finding was a fundamental lack of understanding of the relevance of the social effects of highway construction (Llewellyn et al., 1975). This is not to say that all the transportation departments we visited were unenlightened; indeed, such states as California, Colorado, and particularly Washington, were putting together social profiles and conducting community needs assessments before the term SIA became fashionable. Unfortunately, other regions of the country were not so fortunate -- communities were still being bisected by road construction, and poor neighborhoods were still the most likely candidates for involuntary displacement and relocation of residents.

Ten years have elapsed since those interviews were conducted, and during that period the attention given SIA by transportation officials has waxed and waned. Through most of the 1970s, guidance published by the Department of Transportation underscored the importance of the social consequences of project decisions. As recently as five years ago, former Secretary of Transportation

Brock Adams (1979) made the following observation: "In honor of progress, we built interstate highways designed like concrete canyons, right through our cities dividing neighborhoods and races...Planners somehow forgot that transportation decisions are human decisions" (p. 3). I was reminded of this speech, and how much the Zeitgeist has changed, by an article that appeared in the newspaper just prior to the Rural Sociological Society Annual Meeting. According to the article, a 2.4-mile highway segment has been proposed through southeast Atlanta that will provide access to a library housing Jimmy Carter's papers. The Department of the Interior is opposed to the highway because it would divide five neighborhoods listed on the National Register of Historic Places. Similarly, local residents are concerned about potential noise and air pollution, and the possibility that the highway will become a racial barrier. As one resident indicated: "Only by preserving such neighborhoods can we hope to avoid a complete division along racial and economic lines, between city and suburb." Spokesmen for the Council on Environmental Quality appeared to feel differently. One was quoted as saying that the highway "will improve the neighborhood -- there is a lot of trash and garbage thrown throughout the area now" (Struck, 1984).

I should emphasize that my intent is not to take sides on the issue or to make value judgments about the appropriateness of the highway segment; rather, it is to suggest that awareness of social effects is neither what it was nor what it should be, and even if such effects are recognized, they tend to exert less influence than other factors in the decisionmaking process.

#### Lack of Attention to Sensitive Groups in American Society

It seems safe to say that, historically, there has been little equity in the distribution of costs and benefits of certain federally funded projects. Frequently, those people who have had to shoulder most of the social costs have been members of vulnerable or sensitive groups. Such groups include minorities, the poor, the elderly, and sometimes school-age children. Although the Environmental Protection Agency has recognized such groups in a narrow context, other agencies have been slow to follow suit (Friedman, 1981).

As long ago as a decade or more, data were beginning to accumulate indicating that certain elderly were particularly vulnerable to involuntary displacement and relocation. Anxiety, grief and depression were not uncommon findings. Also linked to forced relocation was the specter of premature death, although, for the most part, the data were largely anecdotal. Research by Pastalan (1973), however, comparing nursing homes -- one threatened by displacement, the other not -- showed a statistically different death rate between the patients of the two homes. Although the effects were attenuated somewhat by counseling, for the incompetent



elderly at least, the anticipation of being relocated was apparently sufficient to trigger premature death. Yet despite the importance of these findings, the implications for large-scale flood control projects and similar actions involving displacement and relocation appear to have escaped agency decisionmakers.

In a similar vein, research conducted over a decade ago demonstrated that freeway noise impairs learning for school-age children (Cohen et al., 1973). Reading skills, in particular, were found to suffer. Subsequent studies of the effects of freeway noise, and that produced by elevated trains, supported the original findings (Bronzaft and McCarthy, 1975).

Not only did these studies raise some serious questions about the longevity of learning decrements in children exposed to such noise, there was also the suggestion that children who could least afford learning setbacks were also likely to be the most vulnerable to noisy conditions (Lukas, 1980). Have we mortgaged the future of a vulnerable segment of the country's youth through poor planning and questionable community noise standards?

#### The Fall-Out from Three-Mile Island: A Future Limitation?

In 1983, the Supreme Court reversed a lower court decision regarding possible psychological health effects that might occur as a result of restarting Unit 1, the undamaged nuclear reactor at Three-Mile Island. In the case of People Against Nuclear Energy (PANE) v. Metropolitan Edison, Justice Rehnquist maintained that PANE's psychological health contentions were not based on a change in the physical environment; rather, these problems were triggered by the risk of an accident. And, since risk of an accident is not an environmental effect, any effects that it may induce in people are not cognizable under the National Environmental Policy Act (NEPA). According to Rehnquist, risk is a pervasive element of modern life; people shoulder risks in various ways, depending on a variety of factors that are simply beyond the analytic capabilities of Federal agencies (Dougherty, 1983).

Only time will tell how much influence the Supreme Court's decision will have on impact assessments. My bias as a social psychologist may be showing, but I do not share the optimism of some of my colleagues simply because the legitimacy of socio-economic effects under NEPA was not challenged. What bothers me is that the Supreme Court now has made a distinction between psychological health effects and certain social effects. Perhaps artificial dichotomy is a better term because the decision appears to put certain categories of effects associated with risk assessment and its consequences "off limits."

Consider, for the moment, some of the stress-induced behavior reported in connection with Three-Mile Island. We know, for example, that physicians and other critical hospital and nursing

staff abruptly left the Harrisburg, Pennsylvania, area during the early stages of the crisis, leaving hospital patients unattended (Maxwell, 1981). Clearly, the situation would have been far worse had the melt-down proceeded and had casualties started to accumulate. We also know that emergency command and control procedures failed miserably; people fled the area in an unorganized fashion and escape routes became hopelessly snarled. And finally, although evacuation and other emergency contingency plans have become mandatory in communities adjacent to nuclear facilities as a result of Three-Mile Island, critical problems remain. Indications are that, should a similar nuclear accident occur at some point after children have been bussed to school in localities perceived to be potentially affected, kiss them good-bye folks because the bus drivers are not going back to pick them up.

Risk may well be a "pervasive element of everyday life;" but does this mean that the threshold for unacceptable risk must be redefined? Has the concept "human environment" in NEPA become a little less human? Clearly, all is not gloom and doom, as such questions might suggest. In contrast to a few years ago, publics are more sophisticated and better informed. In some agencies, such as the Forest Service, social impact assessment is imbedded in operational guidelines; in others, it still occurs although not always under the SIA label. Nonetheless, my Chicken Little outfit gets a little more snug when I hear a high-ranking official argue, as one did recently before Congress, that social and economic criteria should be excluded from pending legislation. The official dismissed such considerations with a quotation from an acquaintance in the Navy: "Everytime they bring a destroyer into San Diego, it has social and economic impacts."

#### NOTE

- <sup>1</sup>The views expressed in this paper are solely the writer's and not those of the U. S. Fish and Wildlife Service.

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UNITED STATES AND NEW ZEALAND SIA: A CROSS-CULTURAL VIEW

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New Zealand is undergoing rapid environmental change and facing the problems associated with assessing the costs and benefits of that change. Our purpose is to present a synopsis of differences and similarities between New Zealand and the United States with regard to social impact assessment procedures and implementations.

New Zealand is located in the South Pacific about midway between the Equator and the South Pole, equals in area the state of Colorado, and resembles California in shape. The country is approximately 1,000 miles long, but no point is more than 90 miles from the sea. The population is small (about three million) yet composed mostly of urban dwellers. Resource use is primarily agricultural, with sheep and dairy products being the major exports.

New Zealand is going through a time of rapid social change. Specifically, the "favoured trade" status the country enjoyed with its major trade partner, Great Britain, was lost when Britain joined the European Common Market, and world demand for agricultural products has lessened. More generally, New Zealand has experienced the same ill-effects of energy shortages and the associated economic upheavals as the rest of the world. The government response has been a drive to diversify the export base and promote more energy self-sufficiency. The result has been a turn from the traditional agricultural focus to more industrialization and resource exploitation in the form of hydro-electric generation, metals processing, manufacturing, construction of energy plants and mining.

Industrial development is a controversial issue in New Zealand. Quality of life, as measured by traditional social and economic indicators, has in recent times been among the highest in the world but has been significantly eroded in the last ten years. Inflation and overseas debt are taking their toll and the answers offered to such problems include combinations of industrialization, development of greater agricultural diversity through horticulture, and tourism promotion (the country is world renowned for its fishing, hiking, hunting, skiing and other outdoor sports). Resource conflicts include dams for hydro-electric development versus rivers for recreation and preservation of valleys for agricultural purposes, diversion of water for irrigation versus maintenance of water flows for fishing and boating, preservation of native forests out of aesthetic and ecological concerns versus the planting of exotic trees for faster timber production or additional clearing of bush for sheep production.

New Zealand serves as a sensitive barometer of change due to its size and the relative stability of its society prior to the 1970's. As a constitutional monarchy within the British Commonwealth, 90 percent of European New Zealanders can trace their ancestors to the British Isles. The Maoris, the country's Polynesian native people, comprise about eight percent of the total population. The country

has a tradition of state-operated social welfare, and an equalitarian philosophy, although there have always been structural inequalities based on ownership of land and businesses, and on race. Awareness of economic and social differentiation is increasing however, as is race consciousness.

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### Legislative/Legal Comparisons

Impetus for New Zealand's 1973 (revised in 1981) "Environmental Protection and Enhancement Procedures," came from the controversy over the proposed raising of Lake Manapouri for electricity generation in the late 1960's. The procedures adopted are similar to the U.S. Environmental Policy Act of 1969 (NEPA). And there are parallels between the Manapouri proposal and the Santa Barbara oil spill in their striking a note of universal discord leading to formal environmental assessment requirements.

The Commission for the Environment is the agency for overseeing and reporting to the Government on the effectiveness with which procedures are applied. It's primary role is to audit (review) Environmental Impact Reports. But the Commission has served at the pleasure of the Government in the past, rather than having an established legal mandate as in the case of the U.S. Environmental Protection Agency. With the recent change (July, 1984) in governments, the role of the Commission with regard to environmental matters will likely be expanded and strengthened. In fact, the outgoing government's (National Party) vulnerability has been traced in part to its perceived weaker stance on the protection of the environment in general and the role of the Commission in particular.

The promotion of greater industrial development by the former government was largely opposed by active and vocal environmental groups in New Zealand. A "fast track" piece of legislation, the National Development Act (NDA), was introduced in 1979, and amended in 1981, to thwart the delaying tactics of environmentalists and others who opposed various developments, particularly developments that were part of the "think big" strategy (i.e. the National Government's policy of large-scale industrial development). Although the NDA gave legislative backing to a consideration of social effects, inadequacies in the "fast track" process were quickly exposed. A conspicuous example is that Maori issues received inadequate attention in hearings for the huge new synthetic-fuels plant in Taranaki. Subsequently, local Maori groups were able to expose a number of problems concerning a proposed ocean outfall for effluent and pollution of their traditional seafood resources.

### SIA in Practice

With specific regard to SIA, the former government attempted to discount the importance of social effects of its projects, giving primacy to technological feasibility and economic arguments. Technical inputs to environmental planning focussed on physical and biological matters. Early environmental impact reports and audits made little or no mention of social impacts. Since the advent of the NDA and "think big" strategy in 1979-81, combined with awareness of the growth of SIA in North America, the social component of environmental impact reports has grown in recognition and importance. The Commission for the Environment audits have also placed greater emphasis on the social dimension.



Briefs circulated by government departments for SIA's to be conducted by consulting firms have shown important changes over the last two years. Instead of a limited focus on profiling, with some research on possible negative community attitudes, there is now a recognition of SIA as part of a participatory process of planning. As the big projects have entered construction and then operation phases, there have been clear examples of negative social impacts (Taylor and Sharp, 1983). Social monitoring projects have demonstrated the need for both longitudinal research, public participation and a commitment to community development as part of the SIA process.

In contrast to the early U.S. experience, it appears that the emerging group of SIA practitioners in N.Z. are achieving more receptivity for SIA, and active encouragement for its incorporation into the decision process. But top policy makers in both countries appear to be reluctant to alter or stop projects on the basis of SIA information. A case in point is the continuing construction of a series of dams on the Clutha River in the South Island. In spite of protests centering on the negative social effects of flooding valuable farmland and the downtown section of the community of Cromwell, destroying unique river recreation opportunities and the related tourism, the expense of the project, and the fact that New Zealand actually has a surplus of electrical energy and must actively recruit multi-national industries to use this surplus -- the projects have continued in the name of greater economic prosperity and progress, industrial export diversification, and continued employment for the hydro-construction workforce. Monitoring research continues to be strictly limited for the Clutha development.

### SIA in Concept

Perhaps the most striking difference we see between the New Zealand and U.S. experience is that N.Z. does seem to have profited from the early trials and tribulations of U.S. scholars and practitioners, in addition to its own experiences. Despite some faltering early steps, there is now considerable consensus among leading practitioners and SIA policy writers in the New Zealand Government bureaucracy as to the methods, process, and aims of SIA. And these people seem to be able to disseminate their approach both to the people who make the decisions and to those who actually undertake the assessments. New Zealand's small size has enabled it to develop a strong central government, and this may account for a degree of organization and orchestration that has not been possible in the United States. Though differences in perspective and approach have occurred between N.Z. academics and government practitioners, these differences do not seem to be as wide as in the U.S.

A major research project monitoring impacts of the Huntly thermal power project (Fookes et al.) has provided a mass of data, and gained international recognition. The research received large government backing. Some of the findings have been useful to the planning of further projects. For example, it was found that rapid growth in the town of Huntly was strictly limited because the workforce was prepared to commute considerable distances from



larger population centers. Overall, however, the project was regarded by many planners as "too academic" and not orientated to practical solutions of current problems. The resulting scepticism about SIA among development agencies has hindered further funding of monitoring work. Nevertheless, SIA practitioners have learned much from the experience and gained impetus towards formulating a process of SIA within which monitoring is an integral part. Data gathering is linked to issue-identification, mitigation of impacts and community development.

Concern has been expressed by some N.Z. scholars that the U.S. SIA literature is not always applicable to the N.Z. experience. Several developments have taken place in sparsely population areas where very small or no communities were affected. Some projects even necessitated the building of entirely new towns to accommodate workers and their dependents and then the dismantling of these towns during the wind-down phase (Taylor and Bettesworth, 1984). For this reason, the Canadian literature is sometimes more relevant to N.Z. practitioners than the U.S. literature.

Finally, there seems to be more receptivity to assessment of social needs in New Zealand than in the United States. Perhaps N.Z.'s history of centralised social welfare policies and its cultural emphasis on social equality are the reasons. But one does not encounter the same degree of hostility and scepticism one encounters in the U.S. when social costs are discussed. In fact, community leaders solicit social science expertise in evaluating actions affecting their communities and look beyond the immediate dollars and cents figures that U.S. Chambers of Commerce and planning agencies seem to worship.

What is missing in both countries, however, is the development of a viable natural resource policy. Until such a policy is enunciated all resource related plans and projects will be evaluated at best on a piece-meal basis. Long-term, cumulative effects of natural resource exploitation and their relationship with social development will continue to be ignored to the detriment of our future.

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## SOCIAL IMPACT ASSESSMENT FOR NATIONAL FOREST SERVICE PLANNING

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Management planning for the National Forests requires recognition by the Forest Service of socioeconomic and cultural environments which impact upon forest lands and upon which forest land management has an impact.

The management of the National Forests has a variety of effects on people, particularly if they live close to the National Forests. People want certain products or experiences from the National Forests which, in turn, affect the way in which the resources are allocated. Congress has taken these needs and desires into account and thereby legislatively recognized the relationship between people and the National Forests. The involvement of the social sciences in this process is to enable management to meet the requirements of legislation and administrative direction by integrating their input with the physical and biological sciences. Doing this job requires cooperative participation among social and resource specialists to develop a product that can be regarded by all participants as reasonable for use by planners and decision makers.

The performance of a socioeconomic impact assessment (SIA) consists of indentifying proposed management actions and comparing them with baseline or prevailing conditions.

Any changes in social and economic consequences from the baseline data are defined as socioeconomic effects or impacts.

### Background

The Forest Service, as an agency of USDA, operates under several legislative mandates regarding SIA. The National Environmental Policy Act (NEPA) of 1970 mandated the inclusion of data from the social sciences in Forest Plans. The Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 established the first accountability procedures. The RPA has since been amended and supplemented by the National Forest Management Act (NFMA) of 1976, the Cooperative Forestry Assistance Act (CFA) of 1978, and the Forest and Rangeland Renewable Resources Research Planning Act of 1978.

The study anticipated socioeconomic outcomes of all alternatives when combined with Issues, Concerns and Opportunities (ICO's) considered,\* as they influence given socioeconomic variables. The attempt at anticipation is made to provide the decision-maker with the best available information before any commitment is made.

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\*Those planning subjects raised by the general public are referred to as "issues." The management input is referred to as management "concerns." The public input "issues" and management input "concerns." The public input "issues" and management input "concerns" are said to be considered by top management as opportunities for management actions of internal and external interest. Taken together, they are referred to in the Regional Guide as Issues, Concerns, and Opportunities (ICO's).

While all this legislation called for planning and assessment, few provisions were spelled out for the accomplishment of such. However, the Forest Service has developed procedures and processes that can be used to accomplish the necessary SIA's.

## ALTERNATIVES

The scenarios of the alternatives and management related research questions used in the SIA methodology were as follows:

### Alternative Management Strategy A

Continued current Regional standards and guidelines to implement the RPA Program and where current standards and guidelines do not exist, establish those required by NFMA regulations. This alternative strategy approximated a no-action alternative, and as such, served as a baseline for estimating changes or differences among the alternatives. The "no-action alternative" was designed to show what would happen if the Region made no change in current management direction to implement the RPA Program.

### Alternative Management Strategy B

Implement the RPA Program by emphasizing expanded opportunities to improve employment and social well-being of the economically disadvantaged through application of multiple-use resource management while striving to achieve other national and regional goals.

### Alternative Management Strategy C

Implement the RPA Program by emphasizing the energy and cost efficient production of the forest and range resources directed toward meeting public needs and demands through application of multiple-use resource management while striving to achieve other national and regional goals.

### Alternative Management Strategy D

Implement the RPA Program by emphasizing the protection and enhancement of forest and range environmental qualities which will provide an enduring supply of outdoor experiences and other beneficial uses through application of multiple-use resource management while striving to achieve national and regional goals.

The study was undertaken with the intent of providing social data from an interdisciplinary perspective that anticipated the social outcome of all the alternatives prior to having the responsible official commit to any. This was done in order that the most managerially feasible course of action could be selected from a socioeconomic point of view which would still permit the Forest Service to accomplish its regional goals and objectives in a manner consistent with its national policy as expressed in the RPA.



## METHODOLOGY

The SIA methodology was divided into three major phases, each of which used similar methods to generate data from three separate expert groups. The three groups were: (1) members of the Forest Service interdisciplinary Land Use Planning Team (N=7), (2) a random sample of Forest Service Land Managers in the region (N=26), and (3) an interested group of rural sociologists (N=10). Each of three groups was asked to provide an indication of possible social impacts upon selected social "variables" at the local level vis-a-vis 11 given research questions. There were seven variables of importance for which projected impacts were needed to accomplish the SIA. These were: employment, income, occupational structure, pollution, recreation, housing, and public reaction. The respondent groups were obliged to provide a directional component for possible impact (positive--negative) and an intensity component (none, very little, some, a lot).

In what might be termed a fourth step, impact ratings were combined into an aggregate rating. This was done after assigning weights to the responses for each of the three groups surveyed, so that the aggregate weight given to one group was identical to that assigned to the other two groups.

Responses were in terms of negatives and positives on a rating continuum:

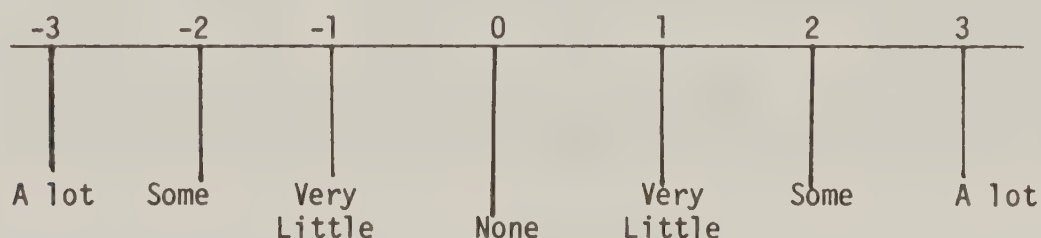


Fig. 1. Information continuum

The continuum approach was especially helpful because it was used for taking responses on either side of center and for cancelling opposite responses from different sides (+some, -some = 0).

In building an alternative, each ICO potential resolution is examined to determine what could be done in resolving the ICO that would also support achievement of the goal statement. The goal statements for each alternative, in addition to planning purposes in NFMA regulations made up the "purposes of management direction." All ICO resolutions and management directions in each alternative were designed to meet planning requirements in NFMA, i.e., each alternative represents a feasible path for RPA Program implementation.

Some basic assumptions were made regarding planning direction for building alternatives. This had to be done because methods and interpretations regarding regional planning were evolving to better fulfill the planning actions as well as the intent of specific laws, regulations, and administrative priorities as the Instructional Guide was in development.

It is realized that an attempt was made to quantify social data which are highly unquantifiable in a true sense. However, the quantifications indicated do have meaning in a comparative sense. When the term, "none" is used to express the probable effect of an alternative on a given variable, it is certainly different from an expression of a "lot for" that or any other variable. Although the expression, "a lot" is not quantifiable, it can be compared to "none" if quantifiable values are assigned to each expression, which is the case in this study.

The land management group contained 26 participants; the sociologist group, 10; the Regional Office professionals, 7. Equal weight for all three groups was accomplished by assigning a weight of 1 to each response by land managers ( $26 \times 1 = 26$ ), a weight of 2.6 to each response by sociologists ( $10 \times 2.6 = 26$ ), and a weight of 3.7 to each response by the Regional Office professionals ( $7 \times 3.7 = 26$ ).

Each participant was asked to assess the impact of each alternative and ICO combination (set out in Table 1) on each of the variables considered.

### Compiling Results of Social Effects

Since Alternative A is the current management direction extended into the future with no change, the social conditions that were observed were not treated except to be pointed out in the "baseline." Analysis was therefore performed on the other alternatives (B - D) by the groups involved in the three-phase methodology mentioned earlier with respect to the variables (employment, income, occupation, pollution, recreation, housing, and public recreation).

### Phase I--Brainstorming Survey

The brainstormers surveyed were members of the Regional Planning Team and other Regional Office professionals. The important dimensions of the proposed resource directions (alternatives) were explored and entered onto the vertical axes of the matrix. This was accomplished by compiling all of the alternative ICO combinations used by management element as previously mentioned. The horizontal axes of the matrix is made up of the previously mentioned socioeconomic variable categories.

The individual responses of each of the seven Regional Office professionals were compiled numerically as shown in Tables 1 and verbally as shown in Table 2. The staff group ranked the alternative ICO combinations and then the variables.

In this regard the minuses and pluses taken from our continuum were tallied in each row to determine alternative ICO combination rankings. Variable rankings were determined in a similar manner using columns instead of rows.

TABLE 1

RESULTS OF BRAINSTORMING AND WRITTEN  
INFORMATION OF STAFF

Variables Alternative ICO Combinations	Employ- ment	In- come	Occupa- tional V.	Pollu- tion	Recreation	Housing	Public Reaction
(2) timber B 6.0	2.4	1.8	1.3	- .4	- .3	1.6	- .4
(3) Timber C 3.2	1.1	1.3	.4	- .3	.1	.9	- .3
(7) Energy B 0.6	1.6	1.6	1.3	-1.9	-1.3	.4	-1.1
(10) Energy C -1.4	.7	-.1	1.3	-2	-.6	.4	-1.1
(9) Range C -0.6	-.4	-.4	0	.1	.6	-.1	-.4
(1) Recreation B 8.1	1.9	1.9	1.6	-1.1	2	.7	1.1
(6) Recreation C 1.4	.1	.1	.3	-.4	.9	0	.4
(5) Lands B 2.4	.3	.9	-.7	.7	2	.9	-1.7
(11) Lands C -1.4	-.1	.4	-.6	.9	.3	0	.4
(8) Lands D -0.3	-.7	0	-.6	.4	2	-.3	-1.1
(4) Visual D 2.6	-.7	-.9	-.4	1.3	1.9	-.6	2

NOTE: The figures to the extreme left in parentheses represent the order of ranking for the alternative-ICO combinations and variables. These rankings were established by tallying the figures found in the rows for alternative-ICO combinations and columns for the variables.



TABLE 2

DOMINANT RESPONSES OF BRAINSTORMING AND WRITTEN INFORMATION  
OF STAFF RELATING TO EFFECTS\*

Alternative ICO Combinations	Employment	Income	Occupation	Pollution	Recreation	Housing	Public Reaction
Timber B	+some	+some	+some	-some	+some/none	+v.little	-some
Timber C	+some	+some	+v.little	-some	-some/none/ some	none	-v.little/none
Energy B	+some	+some	+v.little	-a lot	-some	none	-some
Energy C	+some	+some	+some/ +v.little none	-a lot	none	none	-a lot
Range C	none	-some/none	none	none	none	none	-v.little
Recreation B	+some	+some	+some	-some	+a lot	none	+some
Recreation C	+v.little/ none	+v.little none	+v.little/ -v.little/ none	none	+a lot	none	+v.little
Lands B	none	+a lot/some/ +some	none	+some	+some	none	-some
Lands C	none	none	none	+some	+some/none	none	-a lot
Lands D	-v.little	-v.little/ +some	none	+some	+some	none	none
Visual D	none	-v.little/ none	none	+some	+some	none	+some

\*The dominance here is expressed in the sense that the selected response was given by the greater number of participants.

Numerical values were positive or negative, and plus and minus signs were used in our tabulations to establish rank. Preference in addition to rank had to be considered in the process of making a final decision on a recommended or selected alternative.

Although the primary purpose of this study was to show how the collective wisdom of the three respondent groups was used in enabling the decision maker (Regional Forester) to gain better socioeconomic information to be used in the decision-making process, the interactions in getting to this informational input are of interest. In this regard correlation can be observed among the respective groups in responses to management alternative--ICO combinations and variables as is done in Table 3.

For example, the degree of correlation between group opinions of the Forest Service's effect on the income and housing variables is desired. Particular interest is devoted to these variables because income is an important economic and social variable that is basic to the socioeconomic well-being of a family unit, and housing status is a basic indicator of such well being.<sup>4</sup>

The basic calculations for deriving correlation estimates between Regional Office staff opinions about management effects on income and housing are summarized in Table 3. The "i" column represents income and the "j" column represents housing, with differences between minuses and pluses being accounted for in each case.

In this case it can be stated that there is a very close correlation in the opinions of Regional Staff professionals. Phase II and III of the analysis were handled in the same manner.

The results of all of the previously mentioned calculations are pictured here in tabular form for ease of comprehension.

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<sup>4</sup>Peggy J. Ross, H. Blustone and F. R. Hines, Indicators of Social Well-Being for U.S. Counties, 1979, p. 29.

TABLE 3

CORRELATION BETWEEN REGIONAL OFFICE STAFF'S OPINION  
OF FOREST SERVICE MANAGEMENT EFFECTS ON  
INCOME AND HOUSING

Alternative ICO Combinations	$i$ Income	$j$ Housing	$x = i - \bar{i}$	$y = j - \bar{j}$	$x^2$	$xy$	$y^2$
Energy C	-.1	-.1	-.7	-.5	.5	0.4	.3
Range C	-.4	-.3	-1.0	-.7	1.0	.7	.5
Visual D	-.9	-.6	-1.5	-1.0	2.3	2.0	1.0
Lands D	0	0	-.6	-.4	.4	0.2	.2
Recreation C	.1	0	-.5	-.4	.3	0.2	.2
Lands C	.4	.4	-.2	0	0	0	0
Lands B	.9	.4	.3	0	.1	0	0
Timber C	1.3	.7	.7	.3	.5	.2	.1
Energy B	1.6	.9	1.0	.5	1.0	.5	.3
Timber B	1.8	.9	1.2	.5	1.4	.6	.3
Recreation B	1.9	1.6	1.3	1.2	1.7	1.6	1.4
$\sum i = 6.6$ $\sum j = 3.9$ $\sum x^2 = 9.2$ $\sum xy = 5.9$ $\sum y^2 = 4.3$							
$\bar{i} = 6.6/11 = .6$ $\bar{j} = 3.9/11 = .4$ In this case correlation coefficient $(r_{ij}) = .918$							

The eleven (11) observations here are from the eleven management alternatives used in Table 3.



Table 4  
INTERVALS, RANK CORRELATIONS AND CONCORDANCE  
OF i VS j FOR THE THREE PHASE  
IMPACT STUDY

Phase	Correlation of Intervals vs	Correlation of Variables	Correlation Alternative-ICO Combinations
I-R0	.92	I vs II = .62	I vs II = .38
II-Rangers	.95	II vs III = .71	II vs III = .20
II-Socio.	.75	I vs III = .71	I vs III = .24
Concordance	I vs II vs III = .87		I vs II vs III = .58

The analysis indicated within group consistency in how the variables "income" and "housing" are related. In addition, there is useful information to be gained from observations of overall ranking consistency for all variables and all alternative--ICO combinations. From Table 4, we can see that correlation of variables progresses from .62 to .71 as comparisons are made between the groups taken two at a time. The fact that variable correlation is always greater than .5, and therefore closer to 1 in each case suggests a high degree of positive correlation. The same general observation can be made for the coefficient of concordance\*, which in the case of variables is closer to 1 than 0 and therefore shows high correlation when the aggregate of phases are taken together.

When the same type of observation is made for alternative--ICO combinations, we also find fluctuating coefficients, but with all of them being less than .5 (see Table 5), with a concordance coefficient that is also less than .5.

When the numerical values are set aside and a compilation is made of the verbal answers that occurred most frequently from each of the respective groups (none, very little, some, a lot), we get the following results from the alternative-ICO combinations as they relate to the variables.

This input was included in the information mix that was subsequently used by the decision maker in selecting the Preferred Alternative for implementation.

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\*Measures the quantitative commonality of judgments for the three sets of responses, with a number close to one representing a high degree of concordance and a number closer to zero, representing a low degree of concordance.

# COMPILED RESULTS OF SOCIOECONOMIC IMPACTS\*

\*Projections drawn from Regional ID Team, Random Sample of 25 percent of Southern Region's Rangers and a group of Professional Rural Sociologists.

THE BUREAU OF LAND MANAGEMENT  
MULTIPLE-USE QUESTIONNAIRE PACKAGE

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Purpose and Use of the MUQP

The Multiple Use Questionnaire Package (MUQP) is designed for BLM field offices' use in planning and in environmental assessments. More specifically, the MUQP covers a wide variety of topical areas of interest to BLM. Field personnel can use the MUQP to gather data from the public for social and economic analyses. The questionnaires will have clearance from the Office of Management and Budget for use by BLM personnel in the field. This can reduce considerably the amount of work for the BLM field offices in their efforts to gather relevant social and economic data from the public. The MUQP will enable BLM to augment and enhance the quality of planning and environmental analysis. Standardization and comparability of data analysis, over time and between places, will be achieved. Use of the MUQP will enable BLM to build a record of comparable data on various subject areas.

The distinctive characteristic of this questionnaire package, setting it apart from other public survey instruments, is its flexibility. Although all sections of the package consist of questions which are standardized for BLM, the entire package will never be used in any one application. The pool of questionnaire sections enables offices to select between and within sections to design an instrument suitable to their needs. Each application will involve the use of only a small proportion of the total pool.

Most sections of questionnaires are highly flexible and the user may be very selective in the development of a survey instrument. Other sections, particularly the "Program Specific" questionnaires, will require less modification for their development and use.

Contents of the MUQP

The MUQP contains a "User's Guide" and thirty questionnaires.

The "User's Guide" provides general information and specific instructions concerning selecting questions, assembling a survey instrument, planning and conducting a survey. This includes:

- Purpose and Use of Surveys
- Selecting the Appropriate Survey Method
- Constructing an Instrument From the MUQP
- Guidelines for Drawing the Appropriate Sample
- Guidelines for Conducting a Mail Survey
- Guidelines for Conducting Face-To-Face Interviews
- Guidelines for Conducting Telephone Interviews



Four clusters of questionnaire sections are provided, each with different uses for BLM and each requiring somewhat different mechanics in the development of the survey instrument.

The "Descriptive Characteristics" cluster offers five sections of questionnaires. These sections elicit basic information from respondents which may be used in conjunction with other questionnaires:

- Personal and Household Characteristics
- Personal Satisfaction With Social Environment
- Perception of Federal Agencies
- Perception of BLM Programs/Activities
- Sources of Information About Local Resource Programs
- Personal Use of BLM Lands

The "Planning and Environmental Impact Statement Questions" cluster provides these six sections of questionnaires that focus on public attitudes and perceptions which are related to use, development, and management of natural resources:

- Attitudes Toward Development
- Attitudes Toward Changing Land Use
- Issue Identification
- Importance of Local Conditions and Resources
- Present Local Conditions and Future Expectations
- Preference for Alternative Resource Management Plans

The "Social Assessment" cluster includes three sections of questions related to public perception of community, leadership, and the impact of decision-making and change:

- Your Community - Past, Present and Future
- Perception of Local Leadership
- Leadership Identification, Style and Structure

The "Program Specific Questionnaires" cluster offers the following nine sections of questions which are directed to specific public use of natural resources:

- Personal Fuelwood Use
- Commercial Fuelwood Use
- Recreation Preferences
- Recreation Use and Expenditures
- Wilderness Preference and Use
- Wilderness Preference
- Wildlife Economics
- Alaska Subsistence
- Ranch Budget

#### Development of the MUQP

The development of the MUQP has involved incorporating criticisms, suggestions and guidance from a relatively large number of people.

External reviews of questionnaires were solicited in three phases of instrument development. The review process initially focused on a comprehensive set of questionnaires which were developed for BLM over the past decade. These BLM-provided drafts were intended to be illustrative of the specific topical areas to be represented in the final MUQP.

The first group of reviewers, including potential users of the MUQP, was composed of 50 personnel from BLM and other selected federal agencies. They identified sections which they thought would be most useful. Items which were confusing, too technical and too complex were also identified.

The second group of reviewers involved 30 social scientists, primarily economists and rural sociologists, who also gave their reactions to the BLM-provided drafts. Their responses paralleled in many ways those given by the federal agency reviewers. The predominant theme expressed was: "Don't try to measure complex social and economic variables with complex questions,---only a simple, uncluttered questionnaire design yields valid responses." Several reviewers recommended the Don Dillman "Total Design Method." This group of contributors provided a wide variety of critical comments, sent samples of questionnaires, and suggested research techniques which they had found to be successful.

A third group of 25 reviewers provided criticisms and suggestions to successive drafts and revisions of the "Program Specific Questionnaires." This select group of social scientists and federal agency personnel offered guidance from their "informed" vantage points. Extremely valuable assistance was provided by a smaller number of persons who are currently involved in survey research in the specific natural resource uses.

The MUQP is nearing completion. A training needs assessment of the potential BLM users is being planned. This will be used to make recommendations to BLM for training personnel to use the MUQP.

APPENDIX A: BLM QUESTIONNAIRE ON AGENCY MITIGATION

OCT 31 1984

Name: \_\_\_\_\_

Agency: \_\_\_\_\_

Address: \_\_\_\_\_

[Region/State/County, if applicable]

Phone: \_\_\_\_\_

Identify as many actions or strategies as you can think of which could be taken (implemented) by a Federal, State, or other governmental entity to mitigate adverse community impacts arising from developments which have a direct and significant affect on the community.

Identify which of the above listed actions your agency has the authority to take whether or not they are actually taken. Be as specific as possible regarding the legislative mandates which give your agency this authority and identify which programs are affected. Describe the vehicles available to you to implement these actions (i.e., permit conditions, interagency agreements, etc.). [NOTE: If you do not represent a governmental agency, you may choose onw with which you are familiar or skip this question].

Identify which of the above listed actions your agency has taken or is considering taking. Be specific about the program affected. [NOTE: Ditto the above bracketed note for non-governmental respondents].



Are there any mitigating actions which you are specifically prohibited from taking (by law, executive order, formal policy, or legal opinion)? Yes No  
Describe each prohibited action and list the legal or other mandate which prohibits it.

In cases involving the federal government, an analysis of social and economic impacts and mitigation measures is required where an Environmental Impact Statement (EIS) is done in accordance with the National Environmental Policy Act of 1969. Some states also have an equivalent EIS requirement. List all legal mandates relative to your program(s) which have been interpreted to require a similar analysis. Describe briefly.

How is your agency organized to carry out your program(s) which impact communities? Provide an organization chart, if possible. Indicate who makes (approves) decisions which impact communities. Indicate if there is ambiguity in who makes the decision, if applicable. Indicate if your agency is highly bureaucratic ( i.e., follows strict protocol relations among entities whether according to organizational lines or not versus a very fluid, informal, or evolving relationship pattern among entities/individuals).

What descriptors would you use to characterize your agency's decisionmaking process? Centralized/Decentralized? Dictatorial/Bargaining? Top Down/Bottom Up? Line Management Controlled/Staff Controlled? Use any appropriate descriptors and qualify if necessary.

How would you characterize your agency's concern/actions with respect to mitigating community impacts? Active/Passive? Variable according to situation and people involved? Committed/Uncommitted? List other descriptors of your agency's posture with respect to community mitigation, based on your personal experience and knowledge (i.e., ambiguous).

Is community mitigation a major objective in your agency's program(s)?    Yes    No  
If applicable, identify when it is and when it isn't a major objective.

What are the major objectives of your agency's program(s)?

Is there significant conflict between your agency's major objective and undertaking community impact mitigation actions? Describe how this conflict expresses itself.

Who are the actors (organizations, individuals, political groups, etc.) with whom your agency works in developing mitigation measures and strategies? Base your answer on actual, personal experience.

Who are the actors who should have been involved, but weren't, in developing community impact mitigation measures? Base this answer on your personal experience.

Are there any additional actors who are affected by or have an interest in community impact mitigation but who do not necessarily need to be directly involved in developing mitigating measures?

Identify any formal documents/policies (i.e., office functional statements, position descriptions, directives, manuals, policy statements, precedents) which you rely on to guide you in addressing community impact mitigation issues. Briefly describe these documents and how they influence what you do or don't do.

Identify any informal policies or cultural/behavioral aspects of your organization which influence how you approach mitigation issues.

How old is your program? your agency?

How much does the age of your program or agency influence its approach to mitigation, if at all?

Identify any significant historical events or changes which influenced your agency's approach to community impact mitigation?



Describe the role of sociologists in your agency in analyzing community impacts. Where and with whom do they work?

Describe the role, if any, of sociologists in your agency in public participation? In what context do they get involved in public participation?

Describe the role of sociologists in your agency in: (1) indentifying/developing alternative community impact mitigation measures/strategies; (2) making decisions on mitigation measures; (3) implementing mitigation measures; (4) evaluating the effectiveness (monitoring) of approved/implemented mitigation measures.

What do you feel the role of the sociologist ought to be in your agency?

Are you willing to respond to a follow up questionnaire on community mitigation? ☐ Yes ☐ No

Are you sick of open ended questionnaires?

Thankyou for your cooperation and insights.

Yours for Freedom,

Molly S. Brady  
BLM, Office of Planning



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